

# General Catalogue

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products & accessories

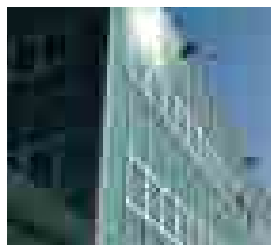


# ***L'ISOLANTE K-FLEX***

# General index

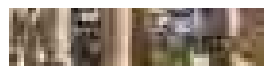


## IK INSULATION GROUP



- 4-23** COMPANY PROFILE  
Worldwide insulation  
Logistics & Distribution  
Packaging  
Technical specifications for insulation.  
General guide to K-FLEX system and products  
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- 92-99** K-FLEX ACCESSORIES  
tapes, components, supports



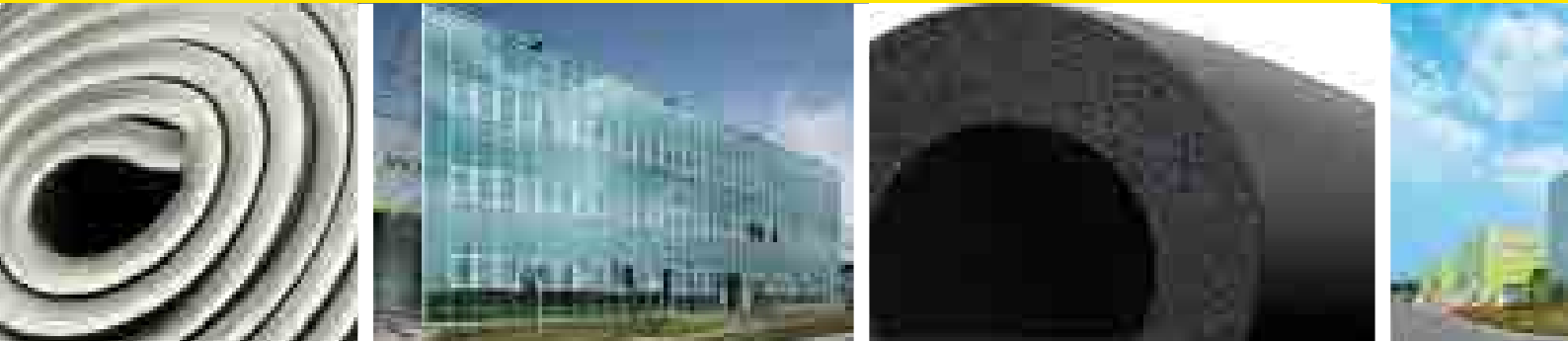


# ***L'ISOLANTE K-FLEX***

[www.kflex.com](http://www.kflex.com)

# Worldwide Leader in the production of **Elastomeric Insulation** for **Energy Saving**

**L'ISOLANTE K-FLEX** is a leading global manufacturer of thermal insulation products, making an impact on energy saving and reducing the greenhouse effect. We provide our customers with innovative solutions, a high level of flexibility and a dedication to service and quality.



# Company Profile

**L'ISOLANTE K-FLEX** is an Italian manufacturing company specialising in the production of thermal and acoustic elastomeric insulation materials. The company has production facilities and subsidiary networks around the globe in order to supply their products to a worldwide customer base. Its diversified product range provides solutions for various market sectors, including building, transportation, petrochemical and renewable energy.

**L'ISOLANTE K-FLEX** is a worldwide market leader thanks to its focus on technological innovation and the quality of its products that play an essential role in energy consumption control and the reduction of greenhouse gas emission.

**L'ISOLANTE K-FLEX** is present in 43 countries, with 11 production facilities and more than 1,800 employees. In addition, the company has a strong commercial distribution network and branches, located all over the world, for the efficient and effective global distribution process of its products.

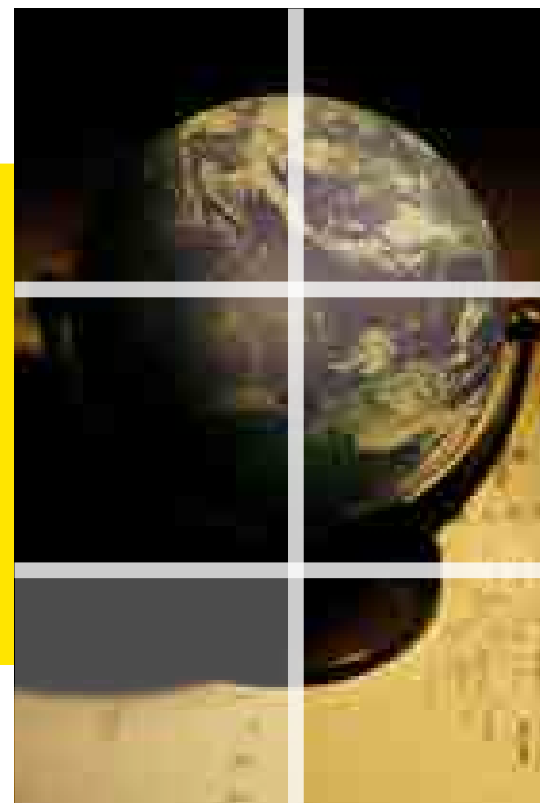
The Company is **UNI EN ISO 9001:2000**, registered and has over one thousand additional certifications for products that guarantee quality, reliability and performance standards for the whole insulation market.

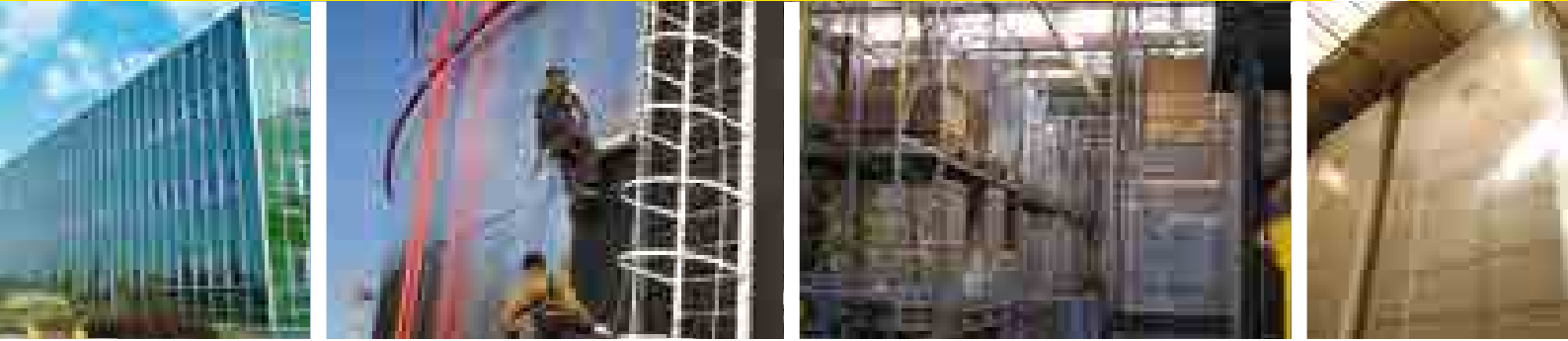
## IN THE WORLD

**L'ISOLANTE K-FLEX** as 11 production facilities located in:

- Italy (Roncello - Headquarters)
- Russia
- China (3 plants)
- Turkey
- USA
- India
- Malaysia
- Poland
- Dubai

**L'ISOLANTE K-FLEX** also has commercial distribution branches in Spain, Norway, Germany, France, United Kingdom, Russia, Ukraine, Singapore, Australia, Egypt, Czech Republic / Slovakia, Baltic States, Romania and Japan.





## The Market

### Heating and Plumbing

Products and solutions for the plumbing sector, designed specifically for sanitaryware distributors.

### Technical and Industrial Insulation

Specialised products for professional high-performance insulation for marine, oil, rail and process industries (chemical, petrochemical and pharmaceutical).

### Solar Thermal

Our materials are used for water connections for everything from solar panels to kettles. Hot water produced by environmentally friendly boilers is distributed for household use.

### Air Conditioning & Refrigeration

Materials used to insulate air handling machinery and the distribution of air conditioning and refrigeration.

### O. E. M.

Solutions for thermal and acoustic insulation for equipment manufacturers (Original Equipment Manufacturers, OEM).

### Acoustics

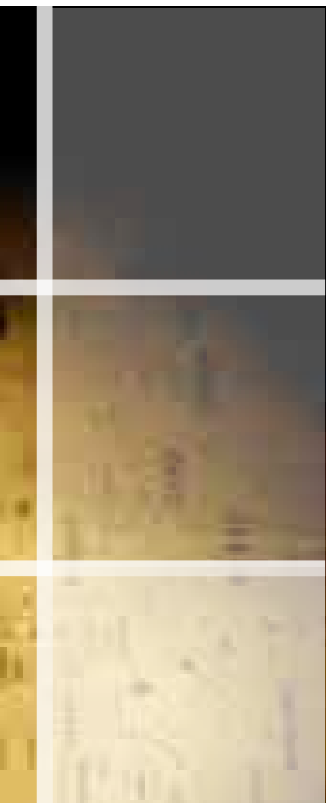
Production and sale of acoustic, soundproofing and damping materials for different applications such as: Construction, HVAC, Industrial, Oil & Gas, OEMs, Marine and Railway, Automotive.

### Firestopping

Prevention and protection solutions for potential fire hazards. REI-class fire-stop panels which also provide excellent thermal insulation.

### Beverage

Insulated tubing bundles for use in food grade applications for beverage dispense equipment.



## K-FLEX's INTERNATIONAL DISTRIBUTION AND PRODUCTION NETWORK

### EUROPE

- ALBANIA
- AUSTRIA
- BALTIC REPUBLICS
- BELARUS
- BELGIUM
- BOSNIA-HERZEGOVINA
- BULGARIA
- CROATIA
- CZECH REPUBLIC
- DENMARK
- FINLAND
- FRANCE
- GERMANY
- GREECE
- HUNGARY
- IRELAND
- ITALY
- LUXEMBOURG
- MACEDONIA
- MALTA
- MONTENEGRO
- NETHERLANDS
- NORWAY
- POLAND
- PORTUGAL
- ROMANIA
- RUSSIA
- SERBIA
- SLOVAKIA
- SLOVENIA
- SPAIN
- SWEDEN
- SWITZERLAND
- SYRIA
- TURKEY
- UK
- UKRAINE

### ASIA

- AZERBAIJAN
- CHINA
- CYPRUS
- DUBAI
- INDIA
- ISRAEL
- JAPAN
- JORDAN
- KAZAKHSTAN
- LEBANON
- MALAYSIA
- PAKISTAN
- SINGAPORE
- SOUTH KOREA
- TAIWAN
- UAE
- UZBEKISTAN

### AFRICA

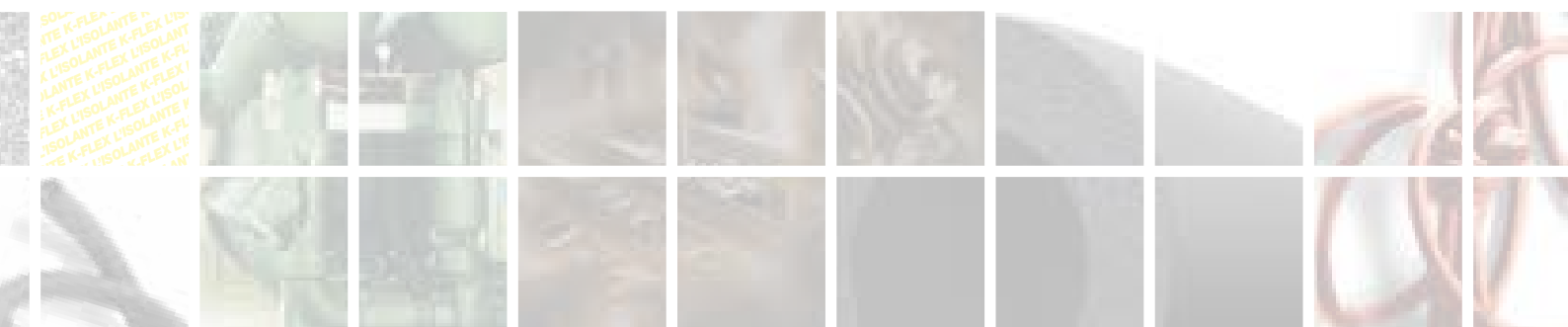
- ALGERIA
- EGYPT
- LIBYA
- MOROCCO
- SOUTH AFRICA
- TUNISIA

### AMERICA

- ARGENTINA
- BRAZIL
- CANADA
- CHILE
- CUBA
- MEXICO
- URUGUAY
- USA
- VENEZUELA

### OCEANIA

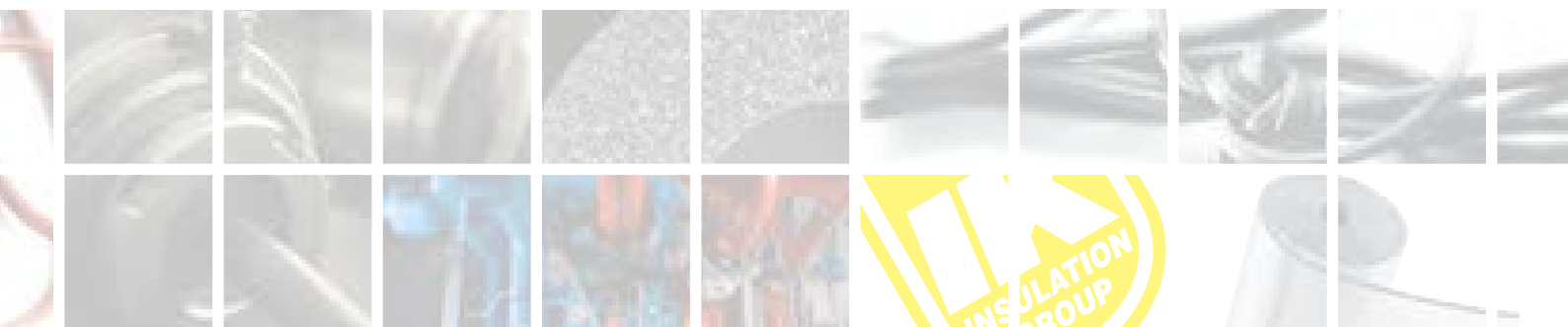
- AUSTRALIA
- NEW ZEALAND







● Production Site    ● Sales Office    ● Distribution Areas







# Technical specifications of our **products**

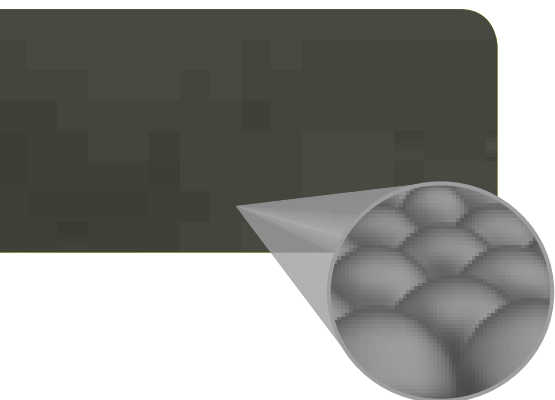


This section describes the technical characteristics of our products to enable an understanding of the quality aspects of insulation materials. Concepts such as closed cellular structure, coefficient of thermal conductivity, water vapour diffusion and - in general - the technical features of our materials are explained as an introductory guide to understanding the technical specifications of each product. There is also a detailed explanation of the different types of materials that we produce: pipe and sheet insulation, moulded products, tapes and insulating supports, specialised trims and insulation systems.



## **K-FLEX**

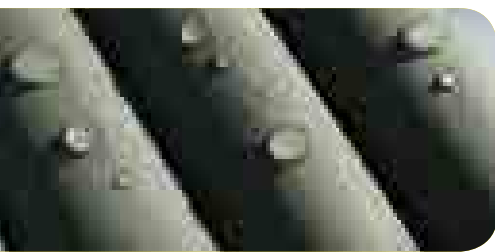
## Closed Cell Products



Thermal insulating closed cell products have many advantages over the traditional open cell and products made of wool or fibreglass:

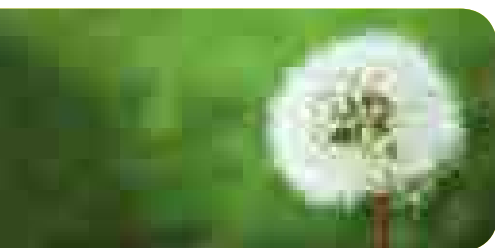
- They have a better thermal conductivity, because the air inside the closed cells has a lower mobility than that produced in open cells therefore the convective component of heat exchange is considerably lower.
- Vapour diffusion into the insulation is much lower, thus the thermal conductivity will be guaranteed for longer, even without using protective coatings.
- The mechanical properties are better.
- They promote a natural inhibition of bacterial growth, because bacteria cannot spread within the structure.

## Resistant to water vapour diffusion ( $\mu$ factor)



Our materials are resistant to water vapour diffusion. The higher the resistance to the penetration of water vapour, (denoted by  $\mu$ ), the greater the consistency of performance over a period of time. This benefit is significant when insulating cold items, where insulation thicknesses are chosen so as to achieve a surface temperature above the ambient dewpoint. Ambient humidity will try to breach the insulation in order to achieve equilibrium conditions. Because the thermal conductivity of water is 0,58 W / (mK), and therefore about 16 times higher than our insulation, any absorption of water vapour could reduce the insulation efficiency. The formation of condensation on the surface of tubing and ducting is the main cause of corrosion beneath insulation which quickly leads to damage of pipes and ducts.

## Non-toxic products



Many insulation materials are porous or fibrous. In these types of materials the presence of moisture and organic matter allow the growth of bacteria, mould and fungi. Our products are resistant to this and thus contribute to the quality of the air that we breathe. We do our best to ensure that our products do not emit VOCs (volatile organic compounds) to further protect air quality by changing the ingredients and production process and ensuring that the products are from certified suppliers. In the USA our products are certified GREENGUARD by the AQS (Air Quality Science) Laboratories. This prestigious qualification in the "GREENGUARD for Children & Schools" programme ensures that the product does not emit toxic substances. In Europe there is a similar certification from the German institute EPA which has approved our product as completely harmless with regard to the emission of air-borne substances. Elastomeric insulation is not made of fibrous material, and does not release harmful particles into the air. This, therefore, is regarded as an ideal product for use in public places such as schools and hospitals. It is also used in clean rooms: for the production of microchips where the minimum of dust and the absence of pollutants are a necessity for efficient production processes.

## Fire Behaviour



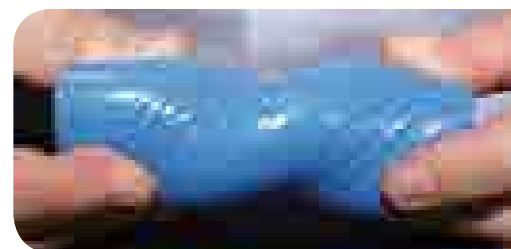
All our products are certified and supervised at major international laboratories which guarantee that they are self-extinguishing in case of fire. Years of experience and international presence have allowed us to surpass even the strictest standards: BS 476, DIN 4102, Euroclass, Italian Class 1, Spanish M1, French NF-FEU, American ASTM and these are just some of over 1500 certifications that our materials have achieved.

# TECHNICAL CHARACTERISTICS



## Flexibility and ease of use

The ease of installation of our materials sets them apart from other products on the market. Due to its flexibility and elasticity, K-FLEX elastomeric insulation is ideal for a variety of applications, such as: air conditioning ducts, pipes, elbows, valves, flanges, reservoirs, etc. Professionals will also appreciate its extreme cleanliness because it does not leave traces and residues during installation. Even restoration and maintenance work can be carried out with ease and can achieve a saving in installation time that is unique compared to other materials.



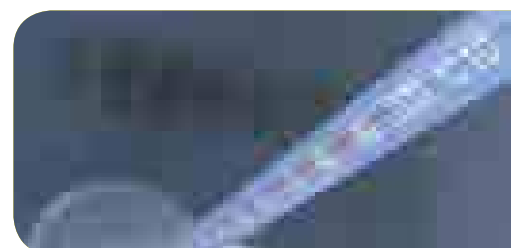
## Quality & Safety

Our materials are compatible with applications in environments where strict testing and international approvals are necessary for marine, rail, oil and clean-room applications.



## Temperature range

Our materials are suitable for applications ranging from -200 °C to +150 °C. The temperature range for each product is always indicated in the appropriate specification.



## Thermal conductivity ( $\lambda$ factor)

Heat flow which, in static conditions, crosses the surface of a homogenous material. Thermal conductivity is a measurement of the ability of a material to transmit heat. As shown in the diagram below, the lower the value  $\lambda$  of a material, the better the thermal insulation.



The Chart compares Insulation features of different materials



Aluminium  $\lambda$  | = **200** W/mk



Water  $\lambda$  | = **0.58** W/mk



Wood  $\lambda$  | = **0.12** W/mk


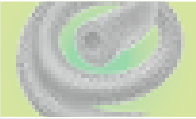




Elastomer  $\lambda$  | = **0.033\*** W/mk

\* at 0°C for K-FLEX ST product  $\leq 25$  mm

# PRODUCTS






The following chart summarizes the main features of our elastomer products and systems and is a practical guide for the professional

	PRODUCT	TEMPERATURE RANGE	$\mu$	$\lambda$
	<b>K-FLEX ST</b> <b>K-FLEX ST DUCT</b>	from -165°C*** to +110°C** from -40°C to +85°C	$\mu \geq 10,000^*$ $\mu \geq 7,000$	<div>Thickness <math>\leq 25\text{mm}</math></div> <div>-20 °C = 0,031 0 °C = 0,033 +20 °C = 0,035 +40 °C = 0,037</div> <div>Thickness &gt; 25mm</div> <div>-20 °C = 0,034 0 °C = 0,036 +20 °C = 0,038 +40 °C = 0,040</div>
	<b>K-FLEX EC</b>	up to +110°C	$\mu \geq 7,000$	<div>Thickness <math>\leq 25\text{mm}</math></div> <div>-20 °C = 0,031 0 °C = 0,033 +20 °C = 0,035 +40 °C = 0,037</div> <div>Thickness &gt; 25mm</div> <div>-20 °C = 0,034 0 °C = 0,036 +20 °C = 0,038 +40 °C = 0,040</div>
	<b>K-FLEX ECO</b>	from -165°C to +120°C	$\mu \geq 3,000$	$\lambda \leq 0.038 \text{ W/mK at } 0^\circ\text{C}$
	<b>K-FLEX SOLAR HT</b>	up to +150°C	-	$\lambda \leq 0.040 \text{ W/mK at } 0^\circ\text{C}$

\* For thickness  $\leq 25\text{mm}$  \*\* Only tubes \*\*\* For industrial applications, product can be applied down to -196°C; for applications below -40°C please contact our technical department.

# SYSTEMS AND FINISHES

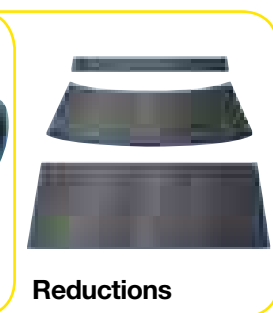
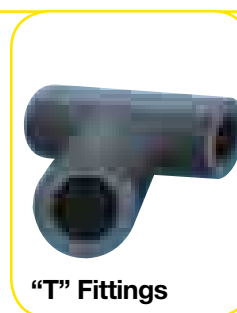
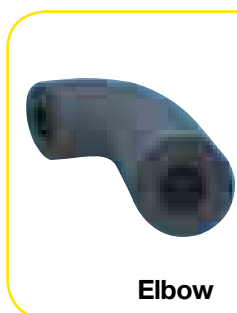
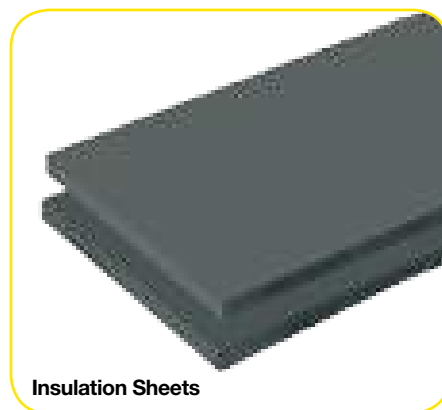
Special finishes and systems to give added value to our insulating materials.

	PRODUCT	COMPOSITION	CHARACTERISTICS
	<b>K-FLEX AL CLAD SYSTEM</b>	Plastic foil + aluminum foil + UV protection films Thickness: $\approx 280$ microns	<ul style="list-style-type: none"> <li>- Weather resistant (UV)</li> <li>- Excellent mechanical strength</li> <li>- Resistant to aggressive chemicals (acids, bases)</li> <li>- Full range of accessories</li> <li>- Aesthetic appearance and functional value</li> </ul>
	<b>K-FLEX IN CLAD SYSTEM</b>	Thermoplastic polymer black and grey Thickness: $1.2 \pm 0.2\text{mm}$	<ul style="list-style-type: none"> <li>- Specified for the Oil &amp; Gas Industry</li> <li>- Full range of accessories</li> <li>- Resistant to salts, fats, oils and UV</li> <li>- Approved by DNV, Lloyds, Factory Mutual, ABS</li> </ul>
	<b>K-FLEX IC CLAD SYSTEM</b>	Woven fibreglass * Density: $\approx 210 \text{ g/m}^2$ Thickness: 0.18 mm	<ul style="list-style-type: none"> <li>- Resistant to high temperatures</li> <li>- Excellent mechanical strength</li> <li>- Full range of accessories</li> </ul>
	<b>K-FLEX COLOR SYSTEM</b>	Coated in BASF paint in different colours	<ul style="list-style-type: none"> <li>- Weather resistant (UV)</li> <li>- Flexible and easy to apply</li> <li>- Wide range of colours available</li> </ul>
	<b>K-FLEX ALU</b>	Multilayer Aluminium - Polyester	<ul style="list-style-type: none"> <li>- Good mechanical strength</li> <li>- Excellent resistance to water vapour</li> </ul>

\* IC CLAD SILVER with aluminized glass cloth

# FEATURES

## PRODUCTS CATEGORY



Preformed fittings (Elbow, "T", reductions, valves, flanges etc..)












### Adhesive Products



Self adhesive Flexible elastomeric sheets with or without reinforced mesh

# PRODUCTS AND APPLICATIONS GUIDE

									
	Refrigeration	Heating	Air Conditioning/ Ventilation	Solar	Industrial	Oil & Gas	Ship building and train	Halogen free	UV Resistant
K-FLEX AL CLAD/F SYSTEM	●								●
K-FLEX AL CLAD SYSTEM	●	●	●		●				●
K-FLEX TWIN SOLAR SYSTEM				●					●
K-FLEX SOLAR R				●	●				●
K-FLEX COLOR SYSTEM	●	●			●				●
K-FLEX IN CLAD SYSTEM					●	●	●		●
K-FLEX IC CLAD SYSTEM					●	●	●		
K-FLEX ECO		●	●		●	●	●	●	
K-FLEX SOLAR HT		●		●	●	●			
K-FLEX ST	●	●	●		●	●			
K-FLEX ST FRIGO	●								
K-FLEX ST/SK	●	●	●						
K-FLEX ST DUCT		●	●						
K-FLEX EC		●	●						
K-FLEX EC AD		●	●						
K-FLEX EC/H		●	●						

This chart is a simple guide designed to match the correct product to the market application.





# Projects



# Civil & Industrial Projects

**New Polo Exhibition of Milan, Italy**  
**Monza Racing Track, Italy**  
**Pirelli, Milan, Italy**  
**Il Sole 24 ore, Milan, Italy**  
**Il Lingotto FIAT, Turin, Italy**  
**Volkswagen, Wolfsburg, Germany**  
**Disneyland, Paris, France**  
**La Fenice Theatre, Venice, Italy**  
**Emirates Tower, Dubai, UAE**  
**"Clean Room" Project, Philippines**  
**Polytechnic, Singapore**  
**Chl Klinik, Luxemburg**  
**New Hospital, Ljubljana, Slovenia**

**Kanada Haus, Berlin, Germany**  
**AGFA, Leverkusen, Germany**  
**Daimler Chrysler, Rastadt, Germany**  
**University, Düsseldorf, Germany**  
**Euroforum, Luxemburg**  
**Top Tower, Darmstadt, Germany**  
**Martenhospital, Dortmund, Germany**  
**Barilla Factory, Parma, Italy**  
**Bayer AG, Chemiepatk – Leverkusen, Germany**  
**State Street Bank, Luxemburg**  
**ST Microelectronics, Agrate/Catania, Italy**  
**IBM, Segrate, Italy**

**Ferrero, Alba, Italy**  
**New regional office in Lombardia, Italy**



New Polo Exhibition of Milan, Italy



J. en P. Schouten Installatietechniek BV, Holland



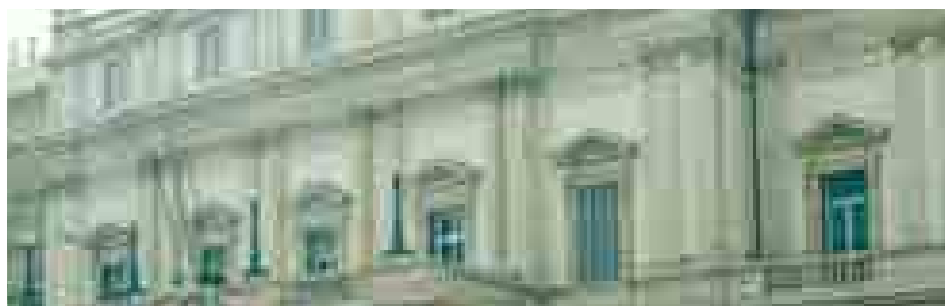
Monza Racing Track, Italy



Società Naturino, Italy

# REFERENCE LIST

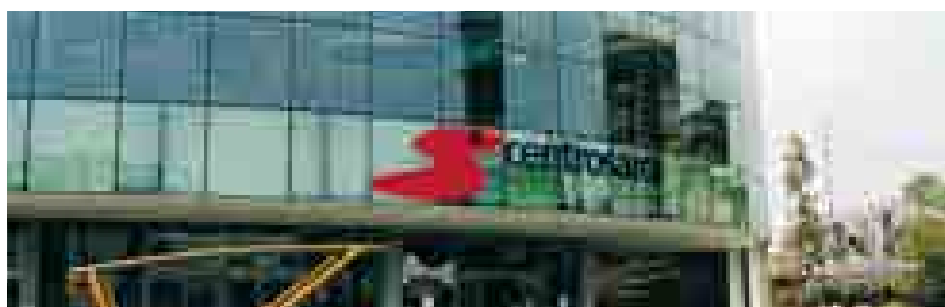
La Scala Theatre, Italy



Aquarium of Genoa, Italy



Sarca mall, Italy



Cavour aircraft carrier, Italy



FS Trenitalia, Italy





## Energy & Shipbuilding

**Central Azeri Platform**, BP, Azerbaijan  
**Fpso P43/P50 Barracuda Field**, Petrobras, Brazil  
**Tpg 500**, BP, Azerbaijan  
**D-6 Platform**, Lukoil, Russia  
**T-47 Drilling Rig**, Agip Kco, Kazakhstan  
**Yastreb Drilling Rig**, Exxonmobil, Russia  
**Visotskij Rpk Oil Terminal**, Lukoil, Russia  
**Fpso P54**, Petrobras, Brazil  
**Moliqpak Platform**, Shell, Russia  
**Sangachal Gas Plant**, BP, Azerbaijan  
**Kashagan Facilities**, Agip Kco, Kazakhstan  
**Fpso Sable**, Exxonmobil, Canada  
**Sakhalin II**, Sakhalin Energy Investment Co., Russia  
**Fpso Terra Nova**, Transcanada, Canada  
**Thebaud Platform**, Exxonmobil, Canada  
**Prirazlomnaya Platform**, Russia  
**Marevo-Vasilevskij (Oil Tankers)**, Novoship, Russia  
**Scarabeo 5 - Drilling Semi-Sub Vessel**, Statoil - Saipem, Norway  
**Statfjord A Platform**, Statoil, Norway  
**Qarn Alam**, Saipem, Oman  
**Fpso Golfinho**, Petrobras, Brazil  
**Ogva 7500 Semi Rig**, Sea Drill, Norway  
**Kashagan - Offshore Barges**, Agip Kco, Kazakhstan  
**LNG Q-Max** (Cryostar, 'EcoRel' Boil-off Gas Re-liquefaction)  
 Exxonmobil, Korea  
**Lng Loading Facilities**, Montoire-de-Bretagne, Gaz De France, France  
**DSME LNGC 2273**, Korea



**Visotskij Rpk Oil Terminal**,  
 Lukoil, Russia

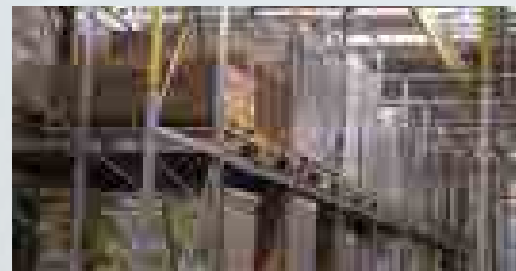
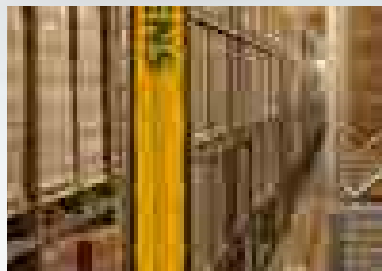
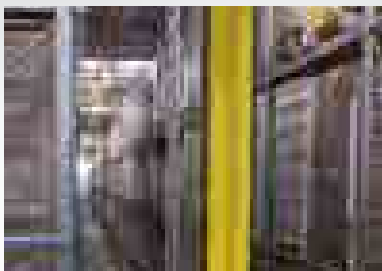
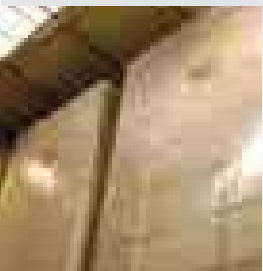
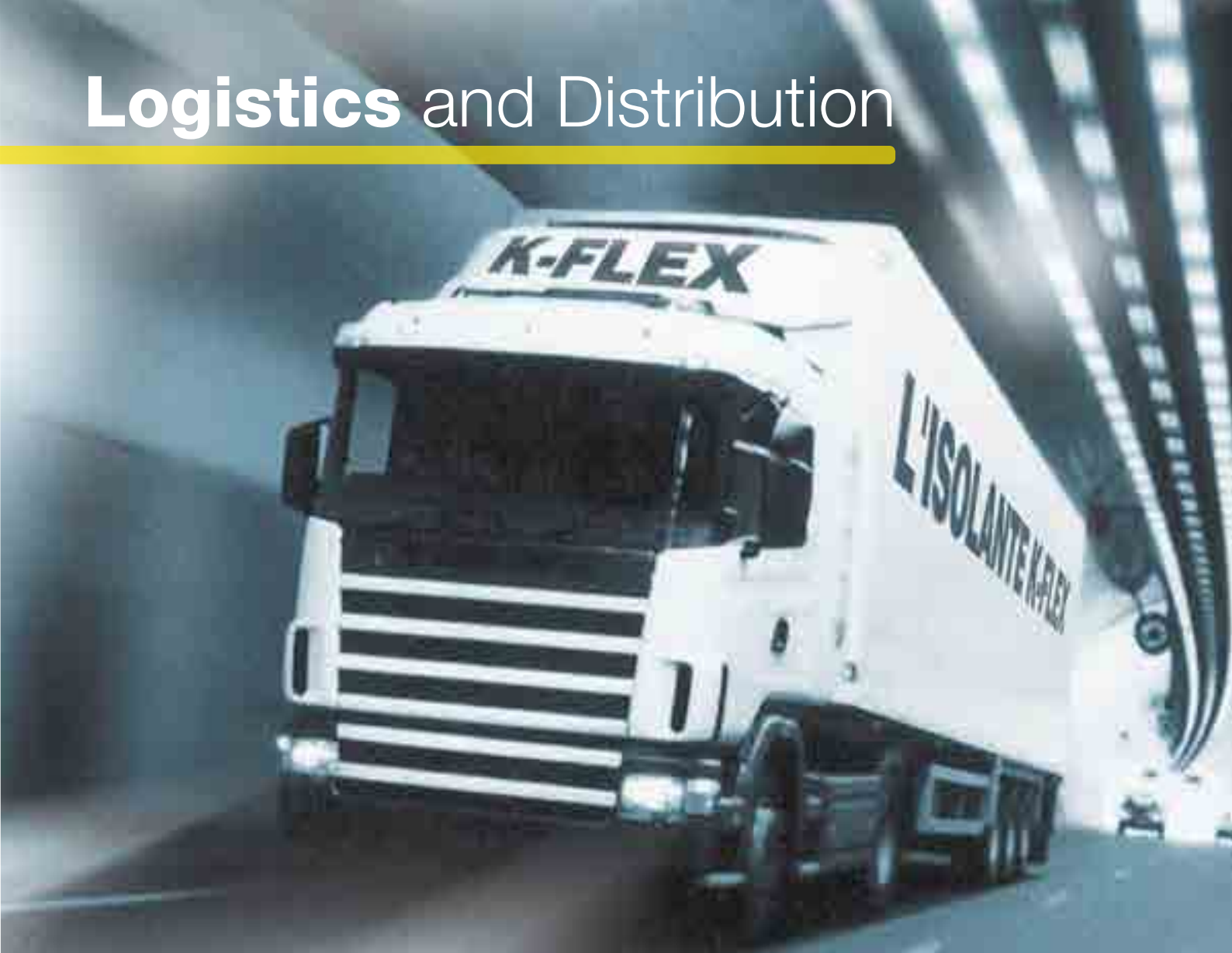


**Kashagan - Offshore Barges**,  
 Agip Kco, Kazakhstan



**Lng Loading Facilities**,  
 Montoire-de-Bretagne, Gas de France, France

# Logistics and Distribution



The high flexibility of our production structure allows us to up-date our stock rotation based on sales forecasts. Being able to give comprehensive answers to any request is one of **L'ISOLANTE K-FLEX's** strong points.

The production capacity of the new plant is 120 million meters of insulation pipes per year (equivalent to 3 times around the Earth) and 10 million square meters of sheet insulation.

The new automated warehouse allows high performance in terms of fast processes, where about 4,000 product references are managed, with an average rotation index equal to 12 per year.

An area of 900 square meters is dedicated to the preparation of materials ready for shipment. This area has been designed with particular attention to ergonomic principles and aspects of work. The area, with more levels, has a special lift to allow an easy handling of pallets.

Through these actions the shipping area is able to prepare and load a quantity of materials equal to 60 complete trucks per day and more than 18000 complete trucks per year.

**K-FLEX**

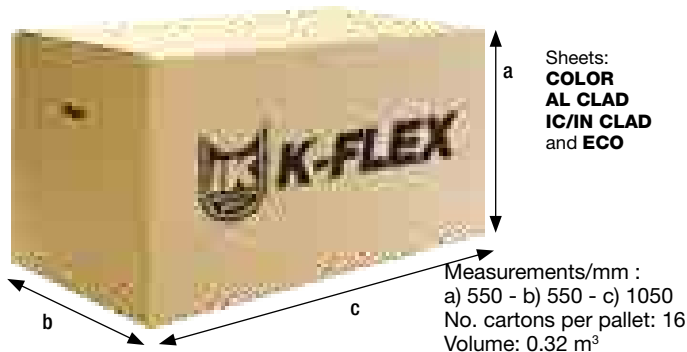
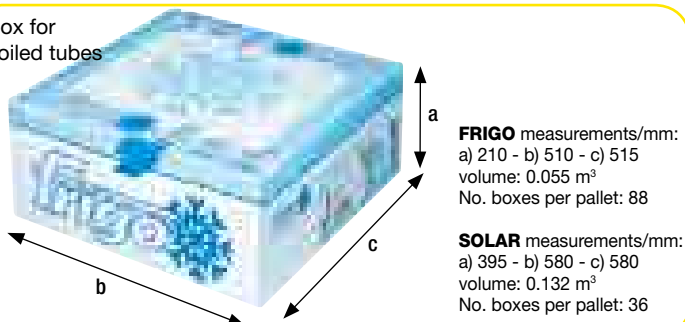
# INFO PACKAGING

Cardboard cartons for tubes of 2 m in length

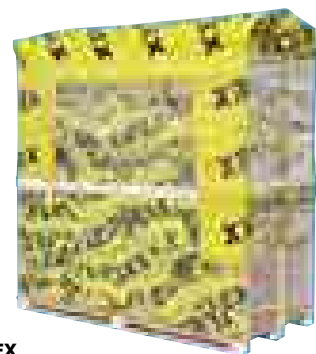
K-FLEX tubes:  
**ST-EC-ECO-SOLAR**Cardboard cartons for 1 m long tubes, which  
can be transformed into dispensers at the point of sale.

**AL CLAD** measurements/mm : a) 1085- b) 390 - c) 390  
No. cartons per pallet: 36 - volume: 0.165 m<sup>3</sup>  
**COLOR** measurements/mm : a) 1085- b) 390 - c) 390  
No. cartons per pallet: 36 - volume: 0.165 m<sup>3</sup>

Cardboard cartons for 1 m wide sheet rolls.

Box for  
coiled tubes**L'ISOLANTE K-FLEX**

offers clients the possibility of transportation on standard pallets for tubes,  
sheets and K-FLEX accessories, with the opportunity to buy a mixture of  
products or sizes on each pallet. Material on pallets can be delivered within  
72 hours anywhere in Europe.

Cardboard cartons for coils **K-FLEX**  
**TWIN SOLAR SYSTEM****Measurements/mm :**

from a) 800 - b) 800 - c) 290 mm  
to a) 1100 - b) 1100 - c) 390 mm  
volume: from 0.15 m<sup>3</sup> to 0.35 m<sup>3</sup>  
No. per pallet: from 6 to 14



**Polyethylene bags** for sheets of 1000/1500 mm in height.  
The bags allows for outdoor storage during the sorting stage.

Sheets: **ST - DUCT - AL CLAD - ECO**

Distinguishing colours:

YELLOW - standard sheets

RED - adhesive sheets

SILVER - sheets with ALU / AL CLAD coverings

BLUE - DUCT sheets

No. of bags per pallet = 20 x 1000mm high sheets

16 x 1500mm high sheets (thickness: 6 - 8 - 10mm)

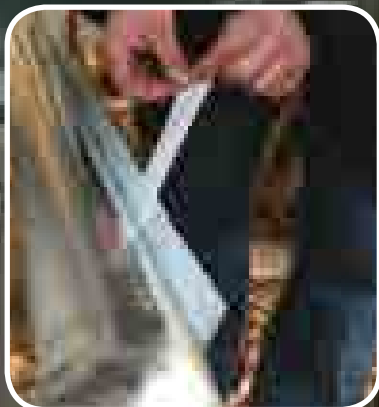
20 x 1500mm high sheets (thickness: &gt; 10mm)



# **Product** Range



## K-FLEX AL CLAD SYSTEM





# K-FLEX AL CLAD SYSTEM



SAVING ON  
INSTALLATION  
TIME

up  
to **40%**



Self-extinguishing  
Versatile and flexible  
Reduced costs of  
installation and maintenance  
UV Resistant

## Applications:

Refrigeration  
Air conditioning  
Heating & Plumbing  
Industry

## K-FLEX AL CLAD SYSTEM

The **AL CLAD SYSTEM** is a complete **K-FLEX** elastomeric insulation system coupled with a multi-layered covering, resistant to ultraviolet rays and atmospheric agents. Because of its excellent physical properties, **AL CLAD SYSTEM** is extremely robust and shock-resistant, reduces application time and is easy to maintain. **AL CLAD SYSTEM** offers a wide range of products and accessories to meet all the installer's requirements.

K-FLEX elastomeric insulation

Polymer Compound  
+ Aluminum foil  
+ UV resistant

L'ISOLANTE K-FLEX's dedication to producing increasingly more effective insulation solutions and offering a wider choice of complete systems is a real benefit to the end user.

K-FLEX AL CLAD SYSTEM is another step forward in new material technology and in the functionality of the covering applied to the insulation product.

## Advantages of K-FLEX AL CLAD SYSTEM

### INTERNAL AND EXTERNAL USE

A special protective surface makes AL CLAD covering UV resistant. This solution makes K-FLEX AL CLAD SYSTEM a complete insulation product for all uses.

### AESTHETIC FEATURES

It is smooth and shiny in appearance. It allows for continuity of the covering even on the parts where work is difficult to carry out. It does not stain and will not show finger prints. It can be cleaned with a cloth without the use of detergents. It does not oxidize and is extremely resistant to aggressive chemicals.

### QUICK & EASY APPLICATION

The application of pre-covered tubes takes just minutes. Only one application is needed to obtain an insulation solution complete with covering. The covered tube can be easily cut with a knife. Sealing can be carried out by using self-adhesive tapes and special glues. Elbows and "T" couplings are pre-cut in standard measurements so they can be easily and quickly applied. The AL CLAD sheet can be easily adapted to any shape which helps installation on difficult areas.

### REDUCED COSTS

Reduced labour time and guaranteed quality of its covering make AL CLAD an extremely cost-effective insulation.

### VERSATILE AND FLEXIBLE

Light, easy to handle and extremely flexible, it allows for an easy, precise and clean installation. Attached to the elastomeric foam, the AL CLAD sheet regains its former shape even after having been crushed by handling, without leaving traces of marks or finger prints.

### COST-EFFICIENT PLANT MANAGEMENT

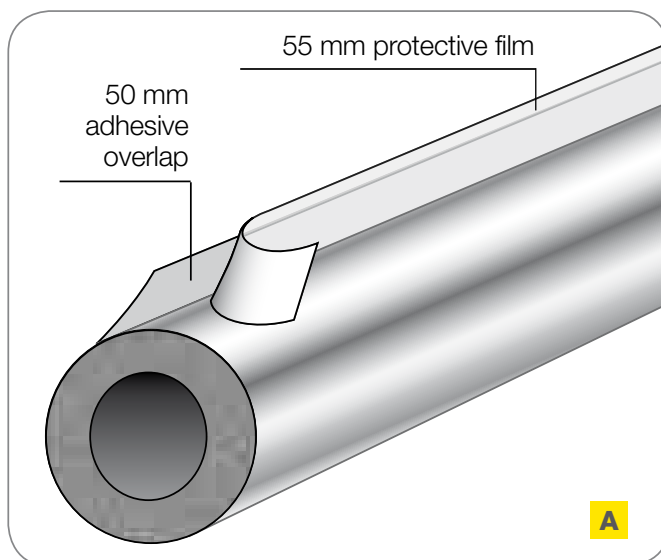
The AL CLAD covering remains intact for the life of the plant, and does not require maintenance. If the covering has to be removed for plant repairs, the high adaptability of the product means that it can easily be re-applied, even to small components, without the need for replacement.

# K-FLEX AL CLAD SYSTEM



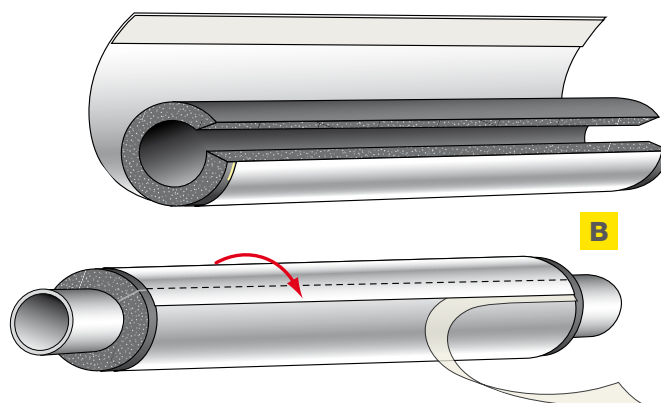
## K-FLEX TUBES AL CLAD SYSTEM

OVERLAP FOR QUICK APPLICATION.  
The elastomeric tube can be re-sealed  
using the recommended adhesive.  
The adhesive overlap facilitates quick,  
accurate closure of the finished product.  
(Figure A)



## K-FLEX AL CLAD SYSTEM/F tubes: for AIR-CONDITIONING and REFRIGERATION SYSTEMS

The K-FLEX AL CLAD SYSTEM/F tube  
is specifically designed for use in the air-  
conditioning and refrigeration sectors. The  
covering is glued to a longitudinal edge of the  
elastomeric insulation, and the overlap is left  
free to make installation easier. This solution  
ensures perfect adhesion of the insulation to  
the pipe, avoiding possible thermal bridges.  
(Figure B)



## K-FLEX AL CLAD SYSTEM rolled sheets, standard and self-adhesive

On request we can supply lengths from  
1000mm to 1500mm. Also available in flat  
sheet. (Figure C)



## K-FLEX AL CLAD SYSTEM Accessories

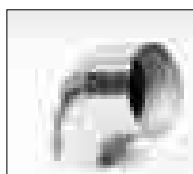
A wide range of accessories: elbows, tapes, "T"  
connections, Insulation pipe supports, knife for  
making 90° cuts, adhesives, thinners, silicone  
and fastening products. (Figure D)



## R A N G E

TUBES	LENGTH:	THICKNESS:	DIAMETER:		
	1 m	9 - 13 - 19 - 25 - 32 mm	from 15 to 160 mm		
TUBES SYSTEM F	LENGTH:	THICKNESS:	DIAMETER:		
	1 m	13 - 19 - 25 mm	from 15 to 160 mm		
SHEETS	1000 mm		1500 mm		
	thickness mm	size m	m²	size m	m²
	6	30 x 1	30	30 x 1,5	45
	9	20 x 1	20	20 x 1,5	30
	13	14 x 1	14	14 x 1,5	21
	16	12 x 1	12	12 x 1,5	18
	19	10 x 1	10	10 x 1,5	15
	25	8 x 1	8	8 x 1,5	12
	32	6 x 1	6	6 x 1,5	9
	40	4 x 1	4	4 x 1,5	6
	50	4 x 1	4	4 x 1,5	6

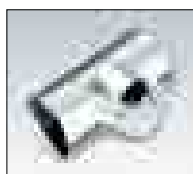
## A C C E S S O R I E S



Preformed K-FLEX AL CLAD elbows



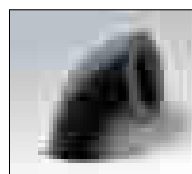
Preformed elastomeric K-FLEX elbows coupled with AL CLAD foil



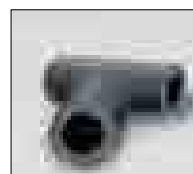
Preformed "T" connections with AL CLAD foil



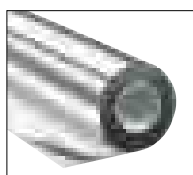
Preformed elastomeric K-FLEX "T" connections coupled with AL CLAD foil



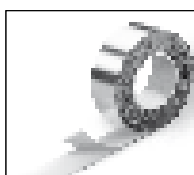
Preformed elastomeric K-FLEX elbows



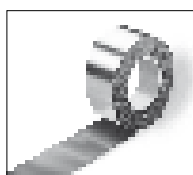
Preformed elastomeric K-FLEX "T" section in standard sizes



AL CLAD foil, with or without adhesive



AL CLAD adhesive tape



AL CLAD butyl tape for outdoor application



K-FLEX AL CLAD system pipe insulated supports



K-FLEX AL CLAD system pipe insulated supports with collar



K-SIL Silicone; available in accessories section glues and thinners

## TECHNICAL DATA



AL CLAD TECHNICAL DATA (covering foil)			
Weight:	Approx.	388 g/m <sup>2</sup>	EN 22 286
Thickness:	Approx.	280 µm	DIN 53 370
Traction resistance:	longitudinal	175 N/15 mm	ISO 527- 3
	transverse	175 N/15 mm	ISO 527- 3
Breaking strain:	longitudinal	35 %	ISO 527- 3
	transverse	40 %	ISO 527- 3
Resistance to tearing:	longitudinal	155 N/25 mm	ISO 527- 3
	transverse	182 N/25 mm	ISO 527- 3
Resistance to bending:	longitudinal	90 N/mm <sup>2</sup>	DIN 53 864
	transverse	90 N/mm <sup>2</sup>	DIN 53 864
Permeability to vapour:		0,052 g/m <sup>2</sup> /d	DIN 53 122
Fire (withK-FLEX ST)	Euroclass C <sub>s</sub> - s3, d0 (EN13501-1) Euroclass D - s3, d0 (EN 13501-1)		

K-FLEX ST ELASTOMERIC INSULATION TECHNICAL DATA		
Temperature range	-165°C** max +110°C*	
Thermal conductivity λ W/(m•K) EN 12667 (DIN 52612) - ISO 8497 (DIN 52613)	Thickness ≤ 25mm	Thickness > 25mm
	-20 °C = 0,031	-20 °C = 0,034
	0 °C = 0,033	0 °C = 0,036
	+20 °C = 0,035	+20 °C = 0,038
	+40 °C = 0,037	+40 °C = 0,040
Corrosion risk	EN 13468; pH neutral (7±1)	
Permeability µ EN12086 (DIN 52615)	≥10000	≥7000
Fire	Euroclass B <sub>s</sub> - s2, d0 (EN 13501-1) Euroclass B - s3, d0 (EN 13501-1)	

\* Only tubes.

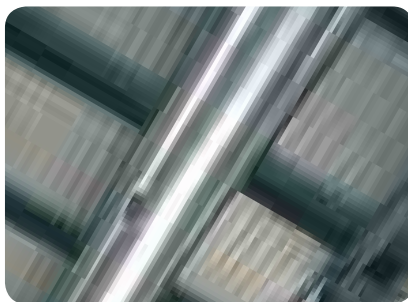
\*\* For industrial applications, product can be applied down to -198°C; for applications below -40°C please contact our technical department.

L'ISOLANTE K-FLEX reserves the right to change data and technical requirements without notice.

AL CLAD: Resistance of the surface to aggressive chemicals		
Acids	acetic acid (max concentration)	resistant
	50% formic acid	resistant
	10% hydrochloric acid	resistant
	30% hydrochloric acid	partially resistant
	10% and 35% hydrofluoric acid	resistant
	10% nitric acid	resistant
	65% and 100% nitric acid	not resistant
	30% and 85% phosphoric acid	resistant
	20% sulphuric acid	partially resistant
Aldehydes	Acetaldehyde	resistant
	Formaldehyde	resistant
Alcohols	Benzyl alcohol	partially resistant
	Cyclohexanol	resistant
	Ethyl alcohol	resistant
	Glycerine	resistant
	Glycol	resistant
	Isopropyl alcohol	resistant
	Methyl alcohol	resistant
Alkaline solutions	Ammonium hydroxide	partially resistant
	Calcium hydroxide	partially resistant
Chlorinate solvents	Chloroform	partially resistant
	Trichloroethylene	partially resistant
Esters	Ethyl acetate	resistant
Hydrocarbons	Aliphatic hydrocarbon	resistant
	Benzene	resistant
	Petroleum	resistant
	Mineral oil	resistant
	Toluene	resistant
	Xylene	resistant
Other organic substances	Acetone	resistant
	Ether	resistant
Salt solutions	Bichromates	resistant
	Cyanides	resistant
	Fluorides	resistant

### RESISTANCE CHARACTERISTICS OF THE AL CLAD SHEET TO ATMOSPHERIC AGENTS:

UV resistance:	>2000 hours 500 W/m <sup>2</sup>
Radiation resistance:	>3.600.000 kJ/m <sup>2</sup>
Resistance to humidity:	>2000 hours UVC (internal test)



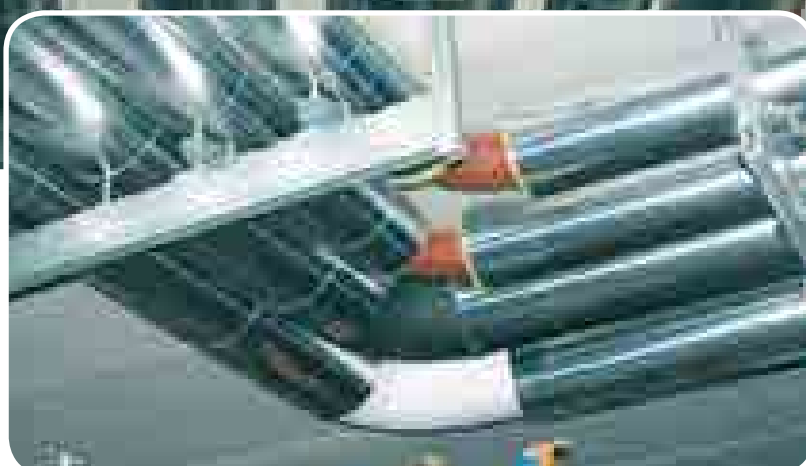
**MILAN POLO EXHIBITION CENTRE, RHO-PERO. CIRCULAR Ø 630 TO 1500 MM VENTILATION DUCTS**  
AL CLAD SYSTEM WITH K- FLEX ST ELASTOMERIC SHEET



**PIRELLI HEADQUARTERS, MILANO. TANKS AL CLAD SYSTEM**  
WITH K- FLEX ST ELASTOMERIC SHEET



**IL SOLE 24 ORE. DUCTS AND PIPES AL CLAD SYSTEM WITH K- FLEX ST ELASTOMERIC SHEET**



**MONZA RACING TRACK. PIPES AL CLAD SYSTEM WITH K-FLEX ST ELASTOMERIC SHEET**





## K-FLEX TWIN SOLAR SYSTEM





# K-FLEX TWIN SOLAR SYSTEM



Complete range of insulation products

Fast & easy installation

UV Resistant

Minimises heat loss

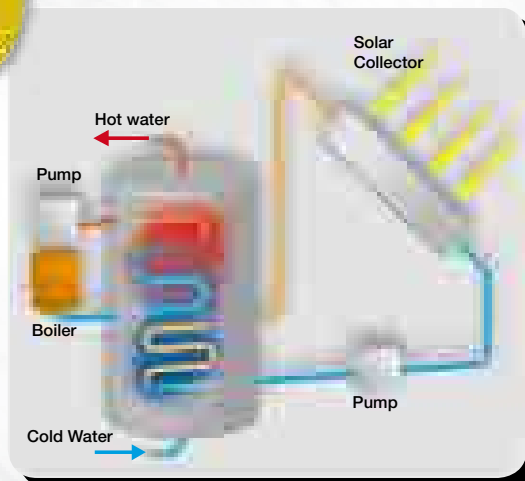
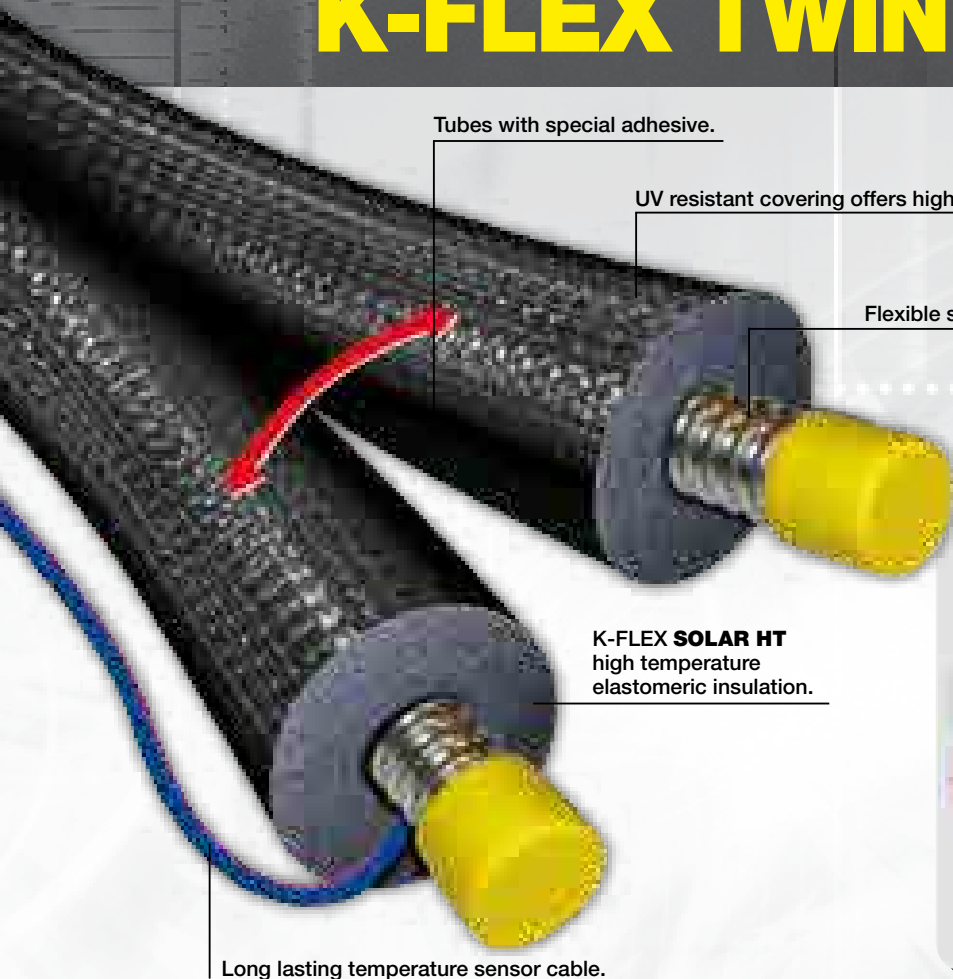
## Applications:

specifically designed for solar thermal panels

## K-FLEX TWIN SOLAR SYSTEM

**K-FLEX TWIN SOLAR SYSTEM** is a solar thermal insulation system which is resistant to high temperatures. It facilitates the connection of a hot water tank to a solar panel, saving installation time; it is designed to minimise heat loss and be resistant to chemicals and weather.

# K-FLEX TWIN SOLAR



## K-FLEX TWIN SOLAR SYSTEM the complete system with:

Specifically designed for solar thermal panels.

UV resistant.

Saving on installation time.

Meets all safety requirements.

- Stainless Steel AISI 316L tubes.
- K-FLEX SOLAR HT insulation.
- High mechanical resistant protective film.
- Complete range of fittings.
- Range of accessories

# K-FLEX TWIN SOLAR SYSTEM

## R A N G E

STEEL TUBES			INSULATION	TUBE LENGTH			
	O.D. (mm)	Wall Thickness (mm)	Thickness (mm)	10 m	15 m	20 m	25 m
DN 16	21.3 ±0.3	0.18	14	●	●	●	●
	21.3 ±0.3	0.18	20	●	●	●	●
DN 20	26.5 ±0.3	0.18	14	●	●	●	●
	26.5 ±0.3	0.18	20	●	●	●	●
DN 25	31.9 ±0.3	0.20	14		●	●	●
	31.9 ±0.3	0.20	20		●	●	●

## A C C E S S O R I E S



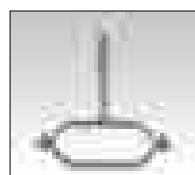
Compression Quick Coupling



Flange Tool



Tube clamp



Oval Pipe support

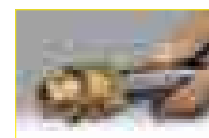
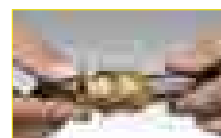
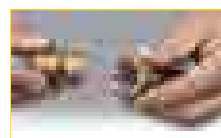
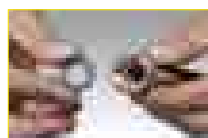
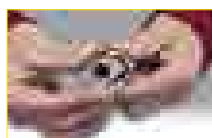
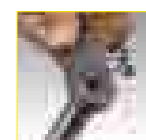
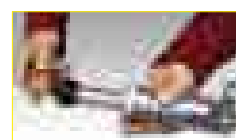
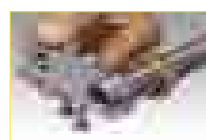
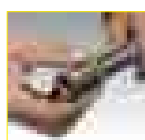
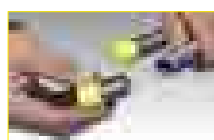
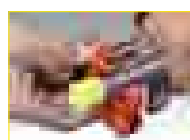


1- nipple, 2- nut, 3- split ring, 4- gasket

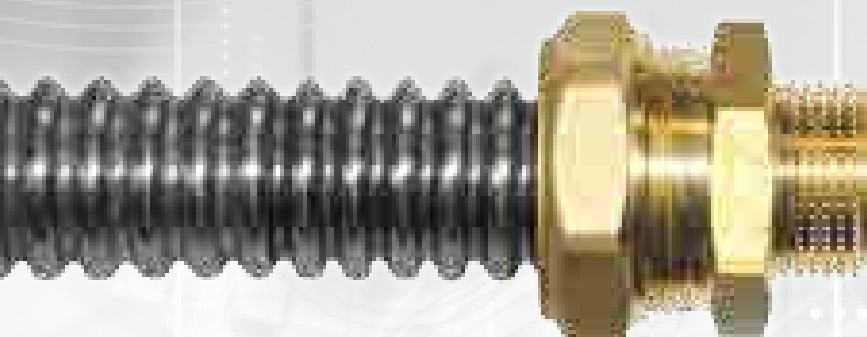


## K-FLEX TWIN SOLAR SYSTEM

### Installation guide:

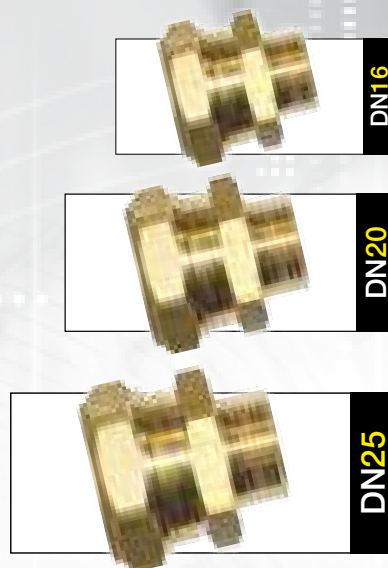


# NEW COMPRESSION QUICK COUPLING



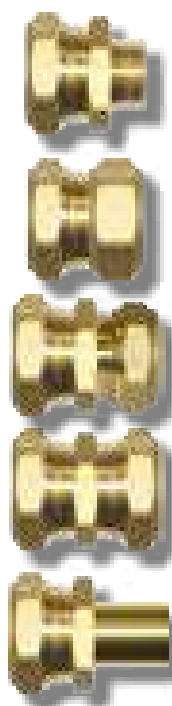
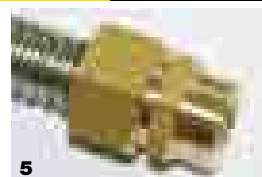
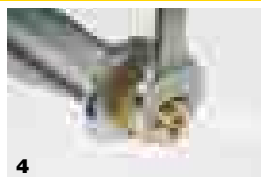
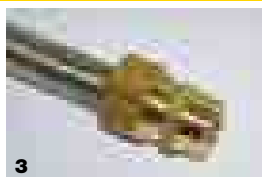
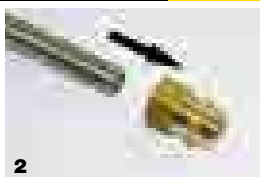
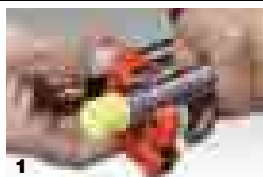
> **Quick assembly** without the need for tools or special equipment. Simple metal to metal seal.

> **Meets safety requirements** and enhances performance by eradicating assembly mistakes.



## K-FLEX TWIN SOLAR SYSTEM

## COMPRESSION QUICK COUPLING ASSEMBLING



Quick Coupling System	
EXTERNAL THREAD COUPLING	External Thread 1/2" DN16
	External Thread 3/4" DN16
	External Thread 3/4" DN20
	External Thread 1" DN20
	External Thread 1 1/4" DN25
INTERNAL THREAD COUPLING	Internal Thread 1/2" DN16
	Internal Thread 3/4" DN16
	Internal Thread 3/4" DN20
	Internal Thread 1" DN20
COUPLING WITH CU CLAMPING RING	Connection system Steel DN16 Copper Ø 15 mm
	Connection system Steel DN16 Copper Ø 18 or 22 mm*
	Connection system Steel DN20 Copper Ø 18 or 22 mm*
	Connection system Steel DN25 Copper Ø 18 or 22 mm*
DOUBLE COUP- LING	Double Coupling system DN 16 - DN 16
	Double Coupling system DN 20 - DN 20
	Double Coupling system DN 25 - DN 25
STRAIGHT FITTING	DN 16 - Straight fitting Ø 22 mm
	DN 20 - Straight fitting Ø 22 mm
	DN 25 - Straight fitting Ø 22 mm
	DN 16 - Straight fitting Ø 18 mm
	DN 20 - Straight fitting Ø 18 mm
	DN 25 - Straight fitting Ø 18 mm

\*Copper connection Ø 18 or 22 mm

# K-FLEX TWIN SOLAR SYSTEM



	O.D. (mm)	Box content	Dimensions	Weight (Kg)	Box Volume (m³)
Insulation Thickness 14 mm	16	10 m	800 x 800 x 290	9.46	0.15
	16	15 m	800 x 800 x 290	13.42	0.21
	16	20 m	800 x 800 x 290	17.66	0.21
	16	25 m	800 x 800 x 290	21.25	0.29
	20	10 m	800 x 800 x 290	10.72	0.15
	20	15 m	800 x 800 x 290	15.31	0.21
	20	20 m	800 x 800 x 290	20.18	0.29
	20	25 m	800 x 800 x 390	24.40	0.29
	25	15 m	800 x 800 x 390	17.71	0.21
	25	20 m	800 x 800 x 550	22.30	0.29
	25	25 m	800 x 800 x 650	28.81	0.35
Insulation Thickness 20 mm	16	10 m	800 x 800 x 290	10.36	0.15
	16	15 m	800 x 800 x 290	14.77	0.21
	16	20 m	800 x 800 x 390	19.46	0.29
	16	25 m	800 x 800 x 550	23.50	0.29
	20	10 m	800 x 800 x 290	11.94	0.15
	20	15 m	800 x 800 x 390	17.14	0.21
	20	20 m	800 x 800 x 550	22.62	0.29
	20	25 m	800 x 800 x 650	27.86	0.35
	25	15 m	800 x 800 x 550	20.80	0.21
	25	20 m	800 x 800 x 550	22.30	0.29
	25	25 m	1100 x 1100 x 390	33.96	0.35



**BOX**



**PALLET**

# K-FLEX SOLAR R

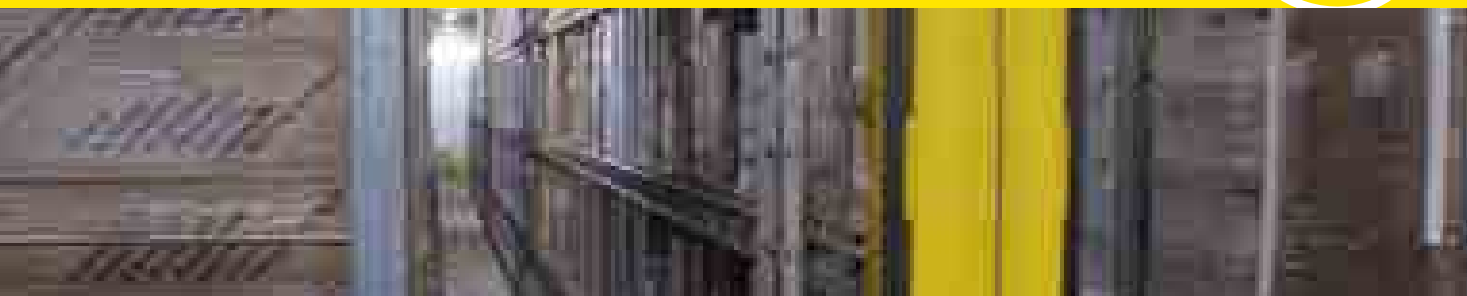


- > The convenient **solution** for solar panels and industrial processes.
- > **Recommended** for solar panels and low pressure steam or industrial process.
- > **K-FLEX SOLAR R** is available in rolls, standard cartons, and half cartons.

## R A N G E

Description	Insulation Thickness	Tube Diameter						length m
		12 mm	15 mm	18 mm	22 mm	28 mm	35 mm	
K-FLEX SOLAR R - Rolls -	14				●	●	●	
K-FLEX SOLAR R - Rolls -	20		●	●	●	●	●	
K-FLEX SOLAR R - Standard Carton -	14				●	●	●	2
K-FLEX SOLAR R - Standard Carton-	20	●	●	●	●	●	●	2
K-FLEX SOLAR R - Half Carton -	14				●	●	●	2
K-FLEX SOLAR R - Half Carton-	20	●	●	●	●	●	●	2

# K-FLEX SOLAR R



Thickness	Diameter	Roll length	Box Dimensions (mm)	Box Volume (m³)	Boxes per Pallet
14	18	30 m	600 x 600 x 405	0.15	40
14	22	25 m	600 x 600 x 405	0.15	40
14	28	20 m	600 x 600 x 405	0.15	40
14	35	15 m	600 x 600 x 405	0.15	40

Thickness	Diameter	Roll length	Box Dimensions (mm)	Box Volume (m³)	Boxes per Pallet
20	12	20 m	600 x 600 x 405	0.15	40
20	15	19 m	600 x 600 x 405	0.15	40
20	18	17 m	600 x 600 x 405	0.15	40
20	22	15 m	600 x 600 x 405	0.15	40
20	28	15 m	600 x 600 x 405	0.15	40
20	35	13 m	600 x 600 x 405	0.15	40



ROLLS

Thickness	Diameter	Tube length	Meters per Carton	Carton Dimensions (mm)	Volume in m³	Cartons per Pallet
14	22	2 m	84	390 x 320 x 2100	0.27	21
14	28	2 m	64	390 x 320 x 2100	0.27	21
14	35	2 m	50	390 x 320 x 2100	0.27	21



STANDARD CARTON

Thickness	Diameter	Tube length	Meters per Carton	Carton Dimensions (mm)	Volume in m³	Cartons per Pallet
20	12	2 m	72	390 x 320 x 2100	0.27	21
20	15	2 m	64	390 x 320 x 2100	0.27	21
20	18	2 m	58	390 x 320 x 2100	0.27	21
20	22	2 m	50	390 x 320 x 2100	0.27	21
20	28	2 m	40	390 x 320 x 2100	0.27	21
20	35	2 m	32	390 x 320 x 2100	0.27	21

Thickness	Diameter	Tube length	Meters per Half Carton	Carton Dimensions (mm)	Volume in m³	Cartons per Pallet
14	22	2 m	36	390 x 155 x 2100	0.13	42
14	28	2 m	28	390 x 155 x 2100	0.13	42
14	35	2 m	22	390 x 155 x 2100	0.13	42



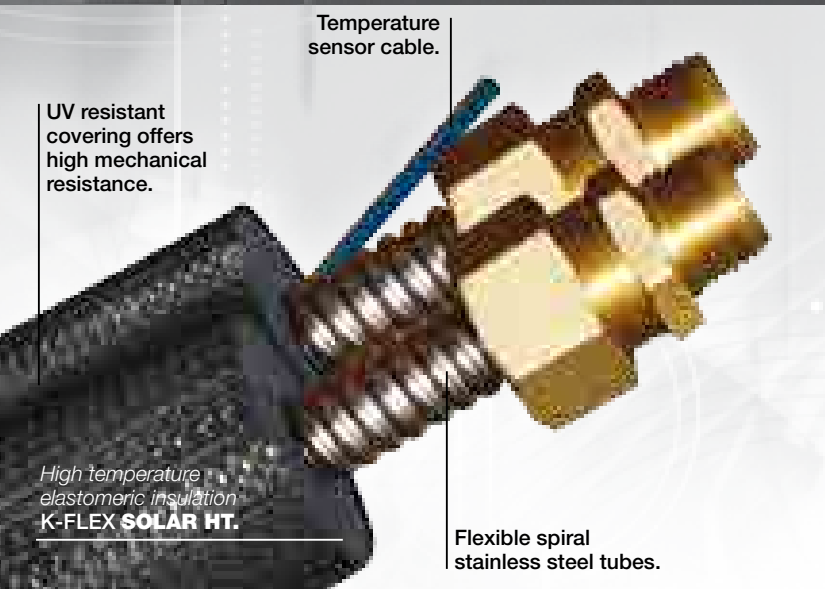
HALF CARTON

Thickness	Diameter	Tube length	Meters per Half Carton	Carton Dimensions (mm)	Volume in m³	Cartons per Pallet
20	12	2 m	36	390 x 155 x 2100	0.13	42
20	15	2 m	32	390 x 155 x 2100	0.13	42
20	18	2 m	28	390 x 155 x 2100	0.13	42
20	22	2 m	24	390 x 155 x 2100	0.13	42
20	28	2 m	20	390 x 155 x 2100	0.13	42
20	35	2 m	16	390 x 155 x 2100	0.13	42





# K-FLEX TWIN SOLAR SPIRAL



- > Spiral stainless steel tube, 0.30 mm thick, with its special coupling offers high functionality.
- > The steel is heat-treated to give the product a greater malleability.
- > The spiral shape decreases the pressure drop inside the tube as shown by the data in the table below.

## R A N G E

STEEL TUBES			INSULATION	TUBE LENGTH		
DN	O.D. (mm)	Thickness (mm)	Thickness (mm)	15 m	20 m	25 m
15	18.44 ÷ 18.69	0.3	14	●	●	●
15	18.44 ÷ 18.69	0.3	20	●	●	●
15	18.44 ÷ 18.69	0.3	25	●	●	●
20	25.33 ÷ 25.58	0.3	14	●	●	●
20	25.33 ÷ 25.58	0.3	20	●	●	●
20	25.33 ÷ 25.58	0.3	25	●	●	●
25	32.50 ÷ 32.80	0.3	14	●	●	●
25	32.50 ÷ 32.80	0.3	20	●	●	●
25	32.50 ÷ 32.80	0.3	25	●	●	●



### Package Content:

- one roll of TWIN SOLAR SYSTEM SPIRAL;
- 4 couplings for spiral tube;



### EXTERNAL THREAD COUPLING

#### DESCRIPTION

DN 15 External thread 1/2"	- 5 set - 2 pieces each -
DN 20 External thread 3/4"	- 5 set - 2 pieces each -
DN 25 External thread 1"	- 5 set - 2 pieces each -



### DOUBLE COUPLING

#### DESCRIPTION

Double coupling DN 15 - DN 15	- 5 set - 2 pieces each -
Double coupling DN 20 - DN 20	- 5 set - 2 pieces each -
Double coupling DN 25 - DN 25	- 5 set - 2 pieces each -

### GASKET

#### DESCRIPTION

Special sealing gasket for Twin Solar Spiral DN 15 (10 pieces / set)
Special sealing gasket for Twin Solar Spiral DN 20 (10 pieces / set)
Special sealing gasket for Twin Solar Spiral DN 25 (10 pieces / set)

## P R E S S U R E D R O P V A L U E S


DN 15		DN 20		DN 25	
Pressure Drop per unit length	Flux	Pressure Drop per unit length	Flux	Pressure Drop per unit length	Flux
(mbar/m)	(l/min)	(mbar/m)	(l/min)	(mbar/m)	(l/min)
1.305	2.089	2.039	5.490	1.159	9.590
2.174	2.468	2.781	6.668	1.947	11.966
3.088	2.962	3.801	7.767	2.874	13.961
4.262	3.287	4.959	9.050	3.986	16.240
5.654	3.690	6.350	10.192	5.191	18.351
7.219	4.086	7.972	11.264	6.628	20.551
8.828	4.444	9.641	12.539	8.343	22.733
10.742	4.765	11.587	13.669	10.104	25.328
12.786	5.160	13.719	14.630	11.958	27.096
15.004	5.513	15.898	16.043	14.090	29.254
17.352	5.929	18.539	16.595	16.407	31.871
19.918	6.453	21.000	18.087	18.818	34.618
22.528	6.802	23.730	19.094	21.413	33.661
25.485	7.101	26.789	20.443	24.305	38.553
28.529	7.394	29.848	21.403	27.207	40.990
31.747	7.983	32.444	23.016	30.358	42.833
34.792	8.412	36.152	24.497	33.834	45.050



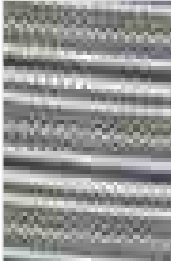
Technical data for **K-FLEX SOLAR HT** thermal insulation with its special protective film ensuring excellent resistance to mechanical impacts and UV.

Technical features for the following products: **K-FLEX TWIN SOLAR SYSTEM**  
**K-FLEX SOLAR R**  
**K-FLEX TWIN SOLAR SPIRAL**

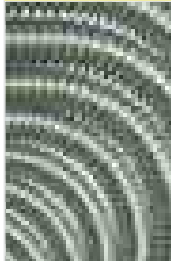
### FLEXIBLE ELASTOMERIC FOAM

	Temperature range	From -50°C to +150°C
	Thermal conductivity $\lambda$ W/(m·K)	
	ENISO 8497 (DIN 52613)	0 °C = 0.040 W/(m·K)
	EN 12667 (DIN 52612)	
	Fire Behaviour	E EN 13501-1
	UV Resistance	Good, according to EN 13859-1


### ANULAR FLEXIBLE STAINLESS STEEL TUBE

	Material	AISI 316 L			
	Ext. Ø (mm)	DN	Thickness (mm)	Max service pressure (bar)	Bend radius (mm)
	21.3 ±0.3	16	0,18	16	25
	26.5 ±0.3	20	0,18	10	30
	31.9 ±0.3	25	0,20	10	35

### SPIRAL FLEXIBLE STAINLESS STEEL TUBE

	Material	AISI 316 L			
	Ø (mm)	DN	Thickness (mm)	Max service pressure (bar)	Bend radius (mm)
	18,44 ÷ 18,69	15	0,3	15	30
	25,33 ÷ 25,58	20	0,3	13	40
	32,50 ÷ 32,80	25	0,3	12	50

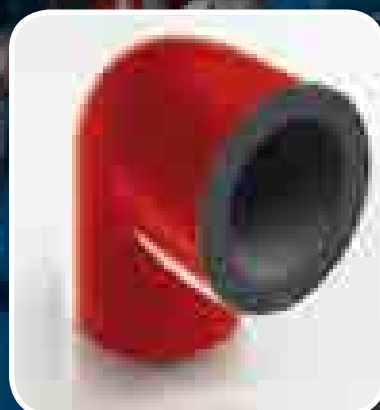
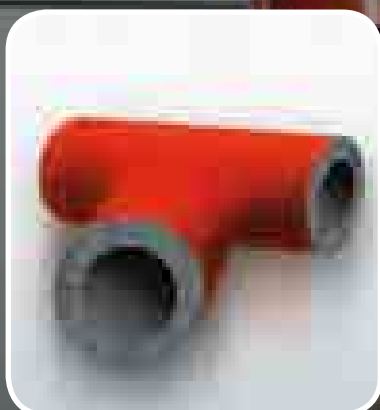
### TEMPERATURE SENSOR WIRE

	Temperature Range	from -60 °C to +200 °C
	Flexible Copper Ø 1 mm	CEI 20 - 19/15
	Wire Insulation	Silicon Rubber
	Rated Voltage	300/500 V
	Electrical Resistance	20.0 Ohm/km

\*as a general rule, the radius of a copper pipe bend should be equal to 4 times the outside diameter of the tube.



## K-FLEX COLOR SYSTEM



# K-FLEX COLOR SYSTEM



SAVING ON  
INSTALLATION  
TIME

up to **50%**

elastomeric insulation  
with UV protection

**BASF**  
coating



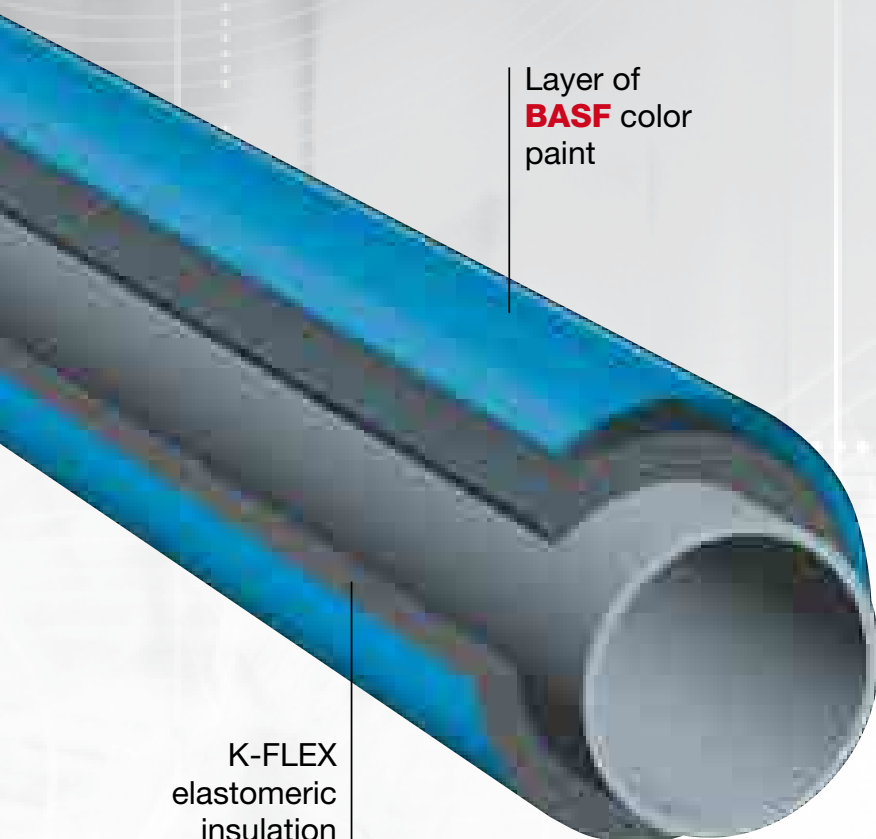
Insulation with colour finish  
Uniform layers  
Improved flexibility and  
application  
Excellent aesthetic solutions  
UV resistant

## **Applications:**

Refrigeration  
Heating  
Air Conditioning/Ventilation  
Industrial

## K-FLEX COLOR SYSTEM

With **K-FLEX COLOR SYSTEM**, a new concept of insulation has been developed: no longer a simple thermal protection system but also an element that can be integrated into the structure offering excellent aesthetic solutions both for designers and architects. The integrated **COLOR** coating eliminates the need for additional applications, giving the insulated pipes a homogeneous appearance.



**K-FLEX COLOR SYSTEM** supported by reliable test results, offers the installer an insulation product which has already been coated during the production process. The product can therefore be fitted in one single operation and does not require maintenance.

Moreover, colours can be chosen to meet the design needs or corporate identity.



## Advantages of K-FLEX COLOR SYSTEM

### PROTECTION OF MATERIALS

The insulation product, available in tube and sheet form, is already coated and does not require any additional applications.

### QUALITY OF THE COATING

The coating is applied during production so it will be constant and uniform over the entire surface. The result is a homogenous protective layer with a greatly improved overall appearance.

### COSTS AND RESOURCES

No additional work is necessary except standard application of the insulation product. Besides the obvious time saving element, the fitter uses a simpler and more professional method of installation.

### DURABILITY K-FLEX COLOR

Applied externally, is resistant to UV rays

### CLEANING OF THE COATING

The surface can be easily cleaned with soap and water.

### VERSATILE AND FLEXIBLE

Manageable and extremely flexible, easy installation.



# K-FLEX COLOR SYSTEM



## K-FLEX COLOR SYSTEM TUBES

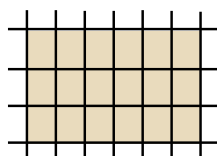
The COLOR coating is applied to K-FLEX elastomeric insulation for various uses.

Pre-cut. The edges are glued together using K-FLEX adhesive and sealed with COLOR self-adhesive tape. (Figure A)



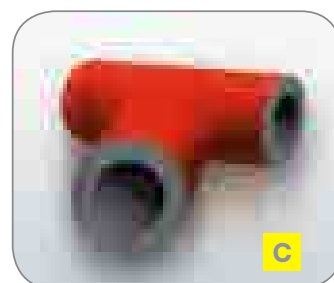
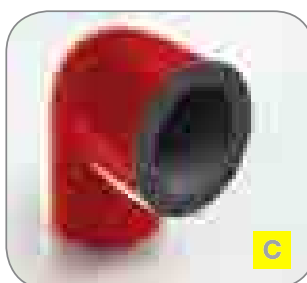
## SHEET K-FLEX COLOR SYSTEM

Also available as self-adhesive with a reinforced mesh. The high-performance adhesive is stronger than standard types making it ideal for both indoor and outdoor use. Resistant to humidity. (Figure B)



## Preformed elbows and "T" connections in standard sizes

The edges are glued together using K-FLEX adhesive and sealed with COLOR self-adhesive tape. (Figure C)



## K-FLEX COLOR SYSTEM Accessories

L'ISOLANTE K-FLEX has created a specific range of accessories for K-FLEX COLOR SYSTEM applications. Besides basic accessories, bonding agents, self-adhesive tapes and COLOR paint for retouching, pre-cut and pre-coated insulation supports in standard sizes are also available. (Figure D)






It is possible to personalize colours on request. Please contact our commercial office for further details.







### COLOR RANGE

#### RAL

	7035 grey
	9002 white
	9011 black

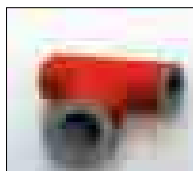
For the minimum order quantity per colour listed below, contact your sales office

	5012 blue
	6032 green
	3000 red
	1019 sand

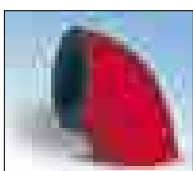
## R A N G E

Tubes 1 m	THICKNESS:	DIAMETER:
	9 - 13 - 19 mm	from 57 to 160 mm
	25 mm	from 60 to 160 mm
	32 mm	from 48 to 160 mm
Tubes 2 m	THICKNESS:	DIAMETER:
	9 - 13 mm	from 10 to 54 mm
	19 mm	from 15 to 54 mm
	25 mm	from 18 to 54 mm
	32 mm	from 18 to 42 mm
Sheets	HEIGHT:	
	1000 mm	
	1500 mm	

## A C C E S S O R I E S



Preformed "T" connections



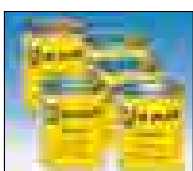
Preformed elastomeric K-FLEX elbows



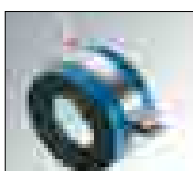
K-FLEX pipe insulated supports



K-FLEX Anti-condensation color tape

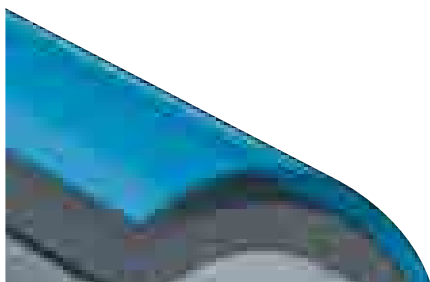


K-FLEX Color Paint



K-FLEX pipe insulated supports with collar

The K-FLEX COLOR coating is the result of numerous tests carried out by **BASF** Coatings to verify how the material reacts to corrosive substances, radiation from the sun and colour resistance over a period of years.



BASF COATINGS	
WOM 2000 hours DIN 53231	No significant alteration
HUMIDISTAT 800 hours ASTM D-2247	Elasticity remains the same
ADHESION 24 hours after HUMIDISTAT	Adhesion remains intact
UVC 2000 hours QUV/SE	No blistering, no separation, no significant alterations
H2O WASH	No alterations
H2O WASH PLUS SOAP FOR HANDS	No alterations
TEST WITH SOLUTION 1 DIN 53160/UAN-D1235/01	Elasticity and adhesion remain the same
TEST WITH SOLUTION 2 DIN 53160/UAN-D1235/01	Elasticity and adhesion remain the same
IMMERSION IN WATER 60 °C 800 hours	No blistering, no separation
CAUSTIC SODA CONTACT to 5% 2 hours	No alterations

Test reports show that BASF paint can be applied onto the surface of K-FLEX elastomeric insulation material and is suitable for both indoor and outdoor use.



K-FLEX ST - TECHNICAL DATA		
Temperature range	-165°C** max +110°C*	
Thermal Conductivity $\lambda$ W/(m*K) EN 12667 (DIN 52612) EN ISO 8497 (DIN 52613)	Thickness $\leq$ 25mm	Thickness > 25mm
	-20 °C = 0,031	-20 °C = 0,034
	0 °C = 0,033	0 °C = 0,036
	+20 °C = 0,035	+20 °C = 0,038
	+40 °C = 0,037	+40 °C = 0,040
Corrosion risk	EN 13468; pH neutral (7 $\pm$ 1)	
Permeability $\mu$ EN 12086 (DIN 52615)	$\geq$ 10000	$\geq$ 7000
Fire (K-FLEX ST)	Euroclass B <sub>L</sub> - s2, d0 (EN 13501-1) Euroclass B - s3, d0 (EN 13501-1)	
Fire (K-FLEX COLOR)	Euroclass C <sub>L</sub> - s3, d0 (EN 13501-1) Euroclass C - s3, d0 (EN 13501-1)	

\* Only tubes

\*\* For industrial applications, product can be applied down to -198°C; for applications below -40°C please contact our technical department.

L'ISOLANTE K-FLEX reserve the right to change data and technical requirements without notice.



## K-FLEX IN-IC CLAD SYSTEM



# K-FLEX IN-IC CLAD SYSTEM

*The first flexible elastomeric foam approved by DNV For LNG and cryogenic applications*



**K-FLEX  
IC CLAD**



**K-FLEX  
IN CLAD**

## Applications:

### IN CLAD:

Specifically for Oil & Gas and industrial  
Resistant to sodium chloride  
Full range of accessories  
UV Resistant

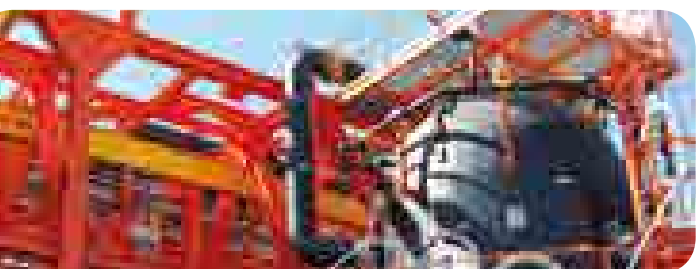
### IC CLAD:

Resistant to high temperatures  
Excellent mechanical strength  
Full range of accessories

## K-FLEX IN-IC CLAD SYSTEM

**K-FLEX IN CLAD SYSTEM** is an insulation system specifically designed for particularly aggressive environments such as offshore platforms, oil rigs and petrochemical plants exposed to sun and seawater, and general situations where a material with superior performance is required. The **K-FLEX IN CLAD SYSTEM** consists of a special thermoformable and thermosealing polymer coating applied to our elastomers; we offer an extensive range of special items such as curves, "T" fittings, valves, flanges and a wide variety of accessories. **K-FLEX IN CLAD SYSTEM** is available in grey or black.

**K-FLEX IC CLAD SYSTEM** is specially coated with glass fibre, available in Silver (aluminum colour) or Black. This finish is particularly resistant to high temperatures and has excellent mechanical properties.



Polymeric 1 mm thick sheet UV resistant  
(grey and black in colour)

K-FLEX closed-cell elastomeric  
insulation foam

## K-FLEX IN CLAD

K-FLEX closed-cell elastomeric foam, with an external, flexible polymeric covering of 1 mm in thickness. K-FLEX IN CLAD gives long lasting protection against aggressive marine environments and is UV and vapour resistant. Preformed pipes are available up to 168 mm in diameter.

BLACK  
VERSION

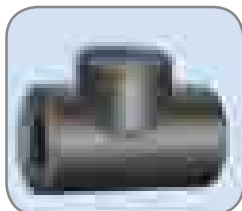
## Range of preformed tubes and fittings



Endcaps



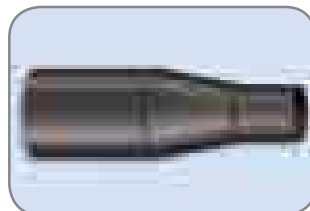
Flanges



Valves



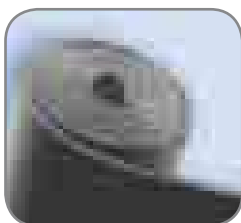
Pipe supports



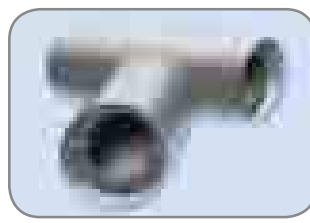
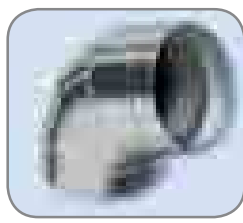
Reductions



1m WIDE SHEETS  
standard and self-adhesive (gray and black versions)



Curves - black and gray versions



"T" pieces



SILVER  
version



BLACK  
version

## K-FLEX IC CLAD

K-FLEX closed-cell elastomeric foam, with an external covering of black or silver fibre-glass fabric.

# K-FLEX IN-IC CLAD SYSTEM



## Special fittings

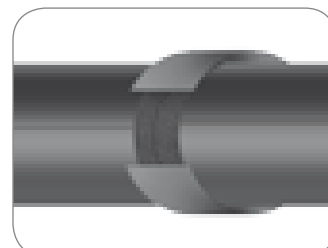
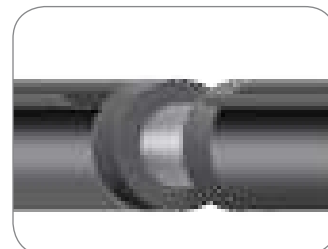
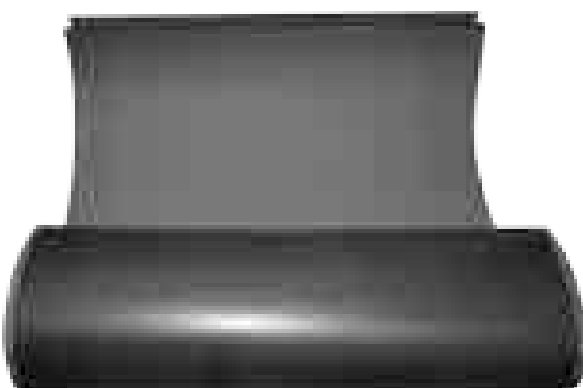
For on-site insulations it is possible to order the various sections based on technical drawings for linear tubes, curves, "T" couplings, flanges and valves. Each section is produced using a high-pressure water machine making them easy to install on site.



## STRAIGHT PIPES

The preformed IN CLAD sheets for pipes with diameters greater than 168 mm are supplied with a 5 cm elastomeric overlap at both ends and a 5 cm IN CLAD longitudinal overlap to facilitate installation. The end joints should be covered with the special IN CLAD band and fixed down with marine sealant.

ELASTOMERIC INSULATION WITH IN CLAD COVERING



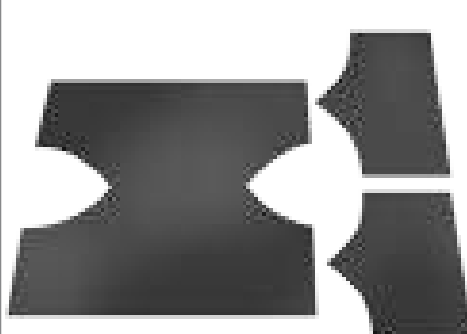
## "T" PIECES

The "T" pieces are made in three pieces which should be directly applied onto the elastomeric sections (two pieces). First install the main section of the "T" connection followed by the coupling sections.

ELASTOMERIC INSULATION



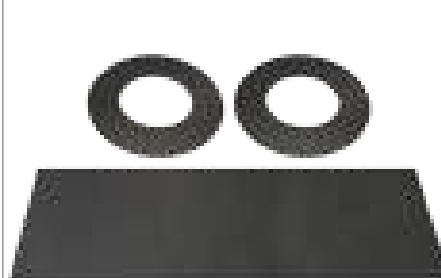
IN CLAD COVERING



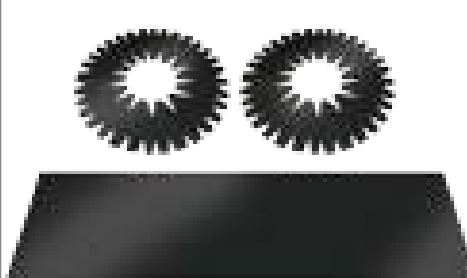
## FLANGES

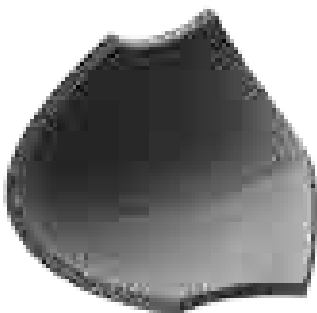
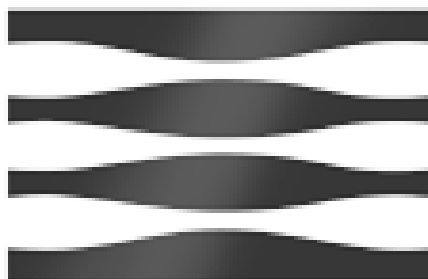
Fringes are cut into the overlaps of the outer and inner edges of the IN CLAD disks to help sealing onto the elastomeric insulation.

ELASTOMERIC INSULATION



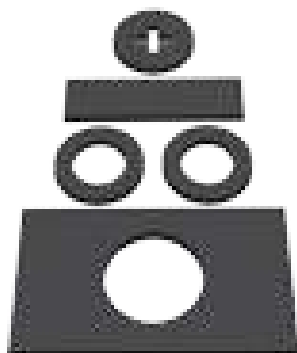
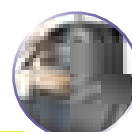
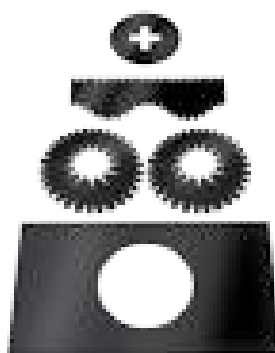
IN CLAD COVERING



**ELASTOMERIC INSULATION**

**IN CLAD COVERING**


## ELBOWS

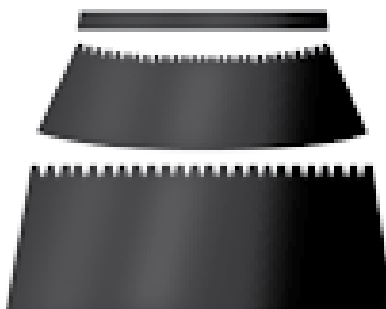
To cover the elbow, the appropriate number of "fish" IN CLAD sections are created and laid over either K-FLEX ST or ECO elastomeric insulation.

**ELASTOMERIC INSULATION**

**IN CLAD COVERING**


## VALVES

To facilitate installation of the IN CLAD covering, fringed are cut into the overlap of the sections which will then be sealed with adhesive onto the K-FLEX ST or ECO elastomeric insulation.

**ELASTOMERIC INSULATION**

**IN CLAD COVERING**


## REDUCTIONS

Reductions are pre-cut in three sections. An overlap of 5 cms with a fringes edge is added to ensure a tight seal over the elastomeric insulation, ST or ECO.

# LNG Applications

**PREFORMED FLANGE**

**PREFORMED ELBOW**

**PREFORMED "T" CONNECTION**


# GAMMA IN-IC CLAD



## RANGE IC / IN CLAD

TUBES	LENGTH:	THICKNESS:	DIAMETER:
	1 m	9 - 13 - 19 - 25 - 32 - 40 - 50 mm	from 15 to 168* mm

\*For diameters greater than 168 mm, use sheet

SHEETS	1000 mm		
	thickness mm	size m	m <sup>2</sup>
	6	30 x 1	30
	10	20 x 1	20
	13	14 x 1	14
	16	12 x 1	12
	19	10 x 1	10
	25	8 x 1	8
	32	6 x 1	6
	40	4 x 1	4
	50	4 x 1	4

## ACCESSORIES



Preformed IN CLAD elbows - Gray



Preformed IN CLAD elbows - Black



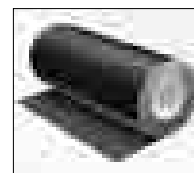
Preformed "T" connections IN CLAD Gray



Preformed "T" connections IN CLAD Black



IN CLAD foil Gray



IN CLAD foil Black



IN CLAD tape Gray



IN CLAD tape Black



Preformed IC CLAD elbows - Silver



Preformed "T" connections IC CLAD Silver



IC CLAD foil Silver



IC CLAD foil Black



IC CLAD tape Silver



IC CLAD tape Black



K-SIL Silicone; available in accessories section glues and thinners



K-FLEX ST ELASTOMERIC INSULATION		
Temperature range	-165°C** a +110°C*	
Thermal conductivity EN 12667 (DIN 52612) EN ISO 8497 (DIN 52613)	Thickness ≤ 25mm -20 °C = 0,031 0 °C = 0,033 +20 °C = 0,035 +40 °C = 0,037	Thickness > 25mm -20 °C = 0,034 0 °C = 0,036 +20 °C = 0,038 +40 °C = 0,040
EN 12086 (DIN 52615)	μ >10000	μ >7000
Fire	Euroclass B <sub>1</sub> - s2, d0 (EN 13501-1)	
	Euroclass B - s3, d0 (EN 13501-1)	
	Class 1 (I)	
	B1 DIN 4102 (D)	
	DIN 4102 Teil 11 (Wall and ceiling penetration)	
	M1 (E)	
	BS 476 Part 6, 7 (UK)	
Permeability to vapour (23 °C) EN 12572 (BS 4370) EN ISO 12572	IMO Res. A 653 (16)	
	IMO Res. MSC 61 (67)	
Closed cells	>95%	
Corrosion DIN 1988/7	EN 13468; pH neutral (7±1)	
Noise reduction	Max 35dB (A)	
Resistance to oils and fats	Good	
Resistance to fungus and parasites	Good	
Odours	Neutral	
Ecological data	No HCFC - CFC	
Certifications	Bureau Veritas CE Marine Mark Approved	
	Germanischer Lloyd	
	Lloyds Register	
	Det Norske Veritas	
	Factory Mutual	
	ABS	
* Only for tubes		
** For industrial applications, product can be applied down to -198°C; for applications below -40°C please contact our technical department		

L'ISOLANTE K-FLEX reserves the right to change data and technical requirements without notice.



K-FLEX ECO ELASTOMERIC INSULATION	
Temperature range	-165 °C to +120 °C **
Fire	Sheet: E (EN 13501-1)
	Tube: D <sub>1</sub> - s2, d0 (EN 13501-1)
	Class 1 (I)
	B2 DIN 4102 (D)
	BS 476 Part 7 (UK)
	IMO Res. A 653 (16)
	IMO Res. MSC 61 (67)
Thermal conductivity EN 12667 (DIN 52612)	λ = 0,036 W/(m·K) at -20 °C λ = 0,038 W/(m·K) at 0 °C
EN ISO 8497 (DIN 52613)	λ = 0,040 W/(m·K) at +20 °C
EN 12086 (DIN 52615)	μ >3000
Closed cells	>95%
Corrosion DIN 1988/7*	pH neutral
Resistance to oils and fats	Good
Resistance to fungus and parasites	Good
Odours	Neutral
Colour	Green
Ecological data	Halogen Free
	PVC Free- CFC, HCFC Free
Certifications	R.I.N.A. - LR - DNV
	Bureau Veritas CE Marine Mark Approved
	US Navy
	Germanischer Lloyd
	ABS
	Lloyds Register
	Det Norske Veritas
	Russian Maritime Register of Shipping
Fume classification	IMO Res. MSC 61 (67)
	IMO Res. A 653 (16)
Fume density (ISO 5659 Part 2)	<Dm 400
* Supervised by an independent Institute	
** For temperatures of less than -50 °C, please consult our technical office.	

L'ISOLANTE K-FLEX reserves the right to change data and technical requirements without notice.

# TECHNICAL DATA



## IN CLAD SYSTEM with K-FLEX ST

PROPERTIES	VALUES	NOTES
Material	Flexible polymeric barrier	
Color	Grey RAL 7001 and Black RAL 9011	
Thickness	1.2±0.2 mm	
MAX Surface Temperature	80°C (176°F)	
MAX application temperature, IN CLAD System	105°C (221°F) 120°C (248°F)	IN CLAD with K-FLEX ST IN CLAD with K-FLEX ECO (Short time)
MIN application temperature for IN CLAD System	-200°C (-328°F)	IN CLAD System with K-FLEX ST tested at -163°C (-260°F) and approved with a statement of feasibility by DNV
Water Vapour Permeability Moisture Resistance Factor (covering)	$\mu > 90.000$	EN12086
Specific weight	1,8± 0.1 g/cm³	
Tensile Strength	>=6,9 Mpa	ISO 37 (Typical value 7.5 Mpa)
Elongation to break	>100%	ISO 37 (Typical values: elongation at 70%, elongation to break 300%)
Elastic Modulus	>=60 MPa	ISO 37 (Typical value 70 Mpa)
Modulus 10%	>1.5 MPa	ISO 37
Peel adhesion	>50 Kpa	ISO 2411
Shear strength	>20 N/25mm	ISO 34-1
Hardness	>=80 ShA	ISO 7619, ASTM D2240
UV Resistance	Extremely good	2 years of exposure in New River, Arizona (USA) as per ASTM G 7-97, no pitting, no cracking, no blistering
Salt Spray resistance	Extremely good	ISO 3768 / ASTM B 117-73, 480 hours. No color shade, no scaling, no blistering
Ozone resistance	Extremely good	ASTM D1171 72h 50pphm 20%, no oxidation
Resistance to aging	Extremely good	ISO 4982, after 360h, 72MJ, elongation to break and modulus conform to specification
Resistance to oil	Extremely good	ISO 1817; after 72h immersion in oil IRM 903, elongation to break and modulus conform to specification
Impact resistance	Extremely good	EN12691; 1 Kg, 20mm, 600mm
Health aspects	Dust and fiber free	
Spread of flame	Pass	BS 476 pt 7
Spread of flame	Pass	NF 92501
Fire propagation	Pass	BS 476 pt 6
Fire requirements for shipbuilding	Pass	IMO 61/67 part 2&5
Approvals and Supervisions	CE Marine Mark Approved (MED, module B)	
	Type approval by American Bureau of Shipping	
	Type approved by Det Norske Veritas	
	Type approved by Lloyd's Register	

### OTHER PROPERTIES:

The product is compliant to the requirements of Norsok standard R-004 ed 3 (par. 5.9 non metallic jacketing)

Application: Product is flexible down to -20°C

Fixing: neoprenic glue (K-FLEX K414, K-FLEX K420), or by specific solvent (THF)

Sealing: SMP sealant (Bostik Findley / Simson ISR 70-03 or ISR 70-05) or thermal sealing

## IC CLAD - FIBRE-GLASS FABRIC (IC CLAD BLACK)

	Unit	Plain	Tolerance	Specification
Weave pattern		Plain		DIN ISO 9354
Area weight	g/m²	214	±5%	DIN EN 12127
Tensile strength	N/cm			DIN EN 12654
Warp		500		
Weft		350		
Finish content	%	4,00-6,00		DIN ISO 1887
Thickness (approx.)	mm	0,18		DIN ISO 4603/E
Temperature Resistance	C°			
Continuous load		+180		
Short time resistance		+230		

## IC CLAD SILVER - ALUMINIUM FINISHING (IC CLAD SILVER)

	Unit	Plain	Tolerance	Specification
Weave pattern		Plain		DIN ISO 9354
Area weight	g/m²	270	±5%	DIN EN 12127
Tensile strength	N/cm²			DIN EN 12654
Warp		550		
Weft		360		
Finish content	%	1,00 - 3,00		DIN ISO 1887
Thickness (approx.)	mm	0,22		DIN ISO 4603/E
Temperature Resistance	C°			
Continuous load		+180		
Short time resistance		+230		

## IC CLAD SYSTEM with K-FLEX ST

Fire	IMO Res. A 653, BS 476 P6/7 Cl. 0
Certification	CE Marine Mark Approved Lloyds, DNV



**CRYOSTAR - LNG PLANT - KOREA - K-FLEX IN CLAD SYSTEM**



**KASHAGAN BARGES, NAVALMARE - ITALY - K-FLEX IN CLAD SYSTEM**

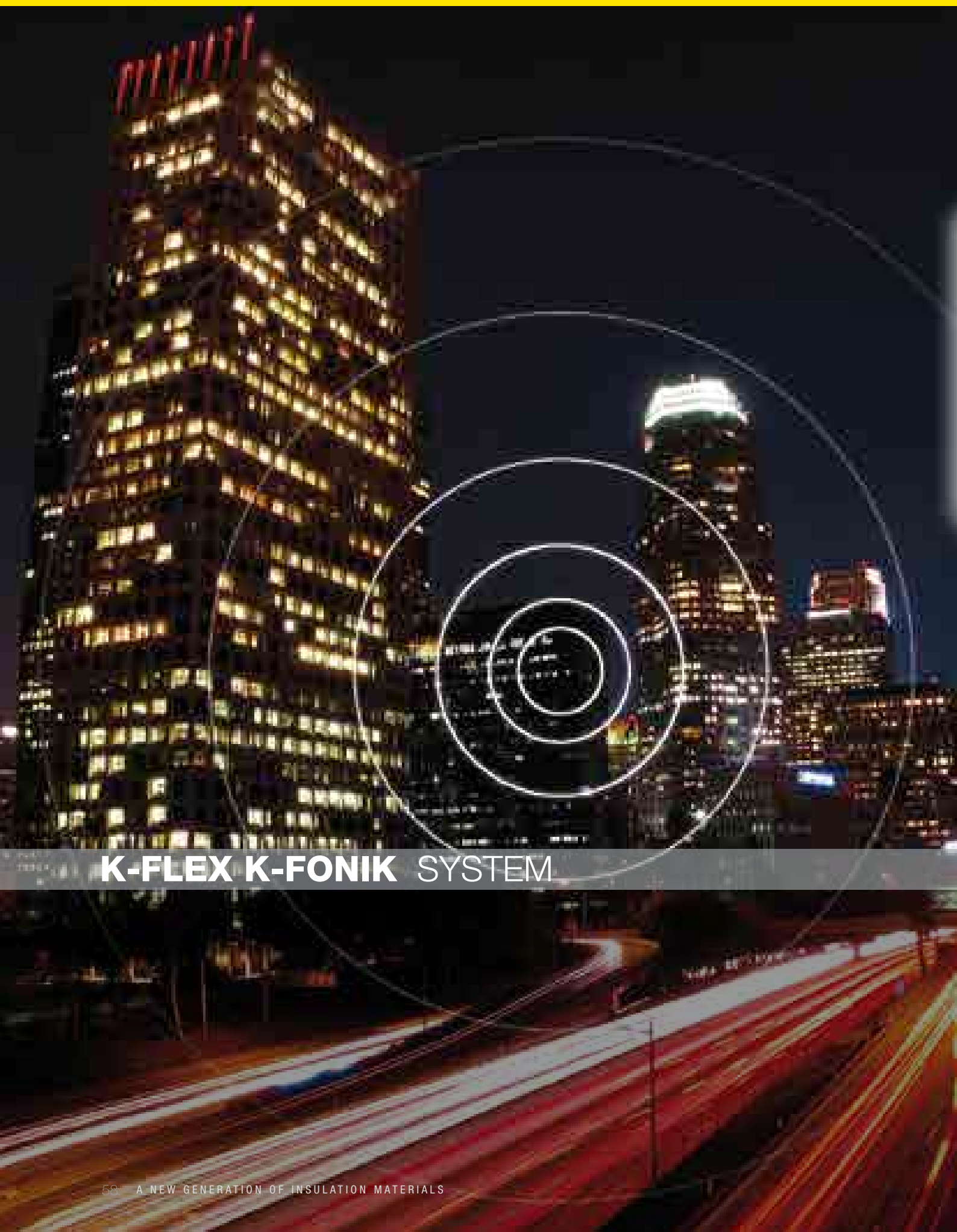




# K-FLEX IN-IC CLAD SYSTEM



**LUKOIL PROJECT - Russia. K-FLEX IC CLAD SYSTEM**



## **K-FLEX K-FONIK** SYSTEM



## Applications:

- Plumbing and drainage systems
- Industry and factory noise
- Sound insulation for walls and dividers
- Floor and ceiling insulation
- Automotive and shipbuilding

## K-FLEX K-FONIK SYSTEM

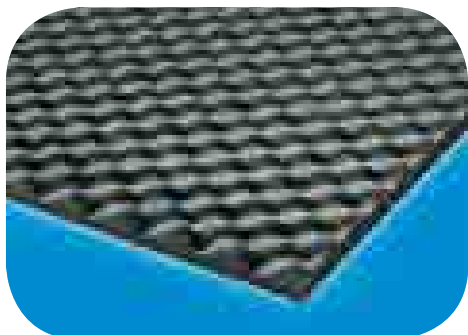
Acoustic comfort is an essential requirement in our life and work environment since it has a profound effect on our quality of life. Operators must be properly protected from sources of noise that could lead to serious illness and reduction in productivity

L'ISOLANTE K-FLEX has developed a wide range of systems for sound insulation, absorbing and damping: the K-FONIK SYSTEM.





## K-FONIK SYSTEM product applications



### **Sound Absorption Materials**

To absorb and dissipate sound energy reducing its reflection from the source.



### **Sound Insulation Materials**

To isolate airborne noise and prevent its migration.

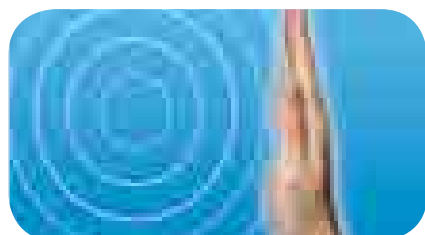


### **Damping Materials**

To dampen noise produced by vibrations from sheets, panels and covers.

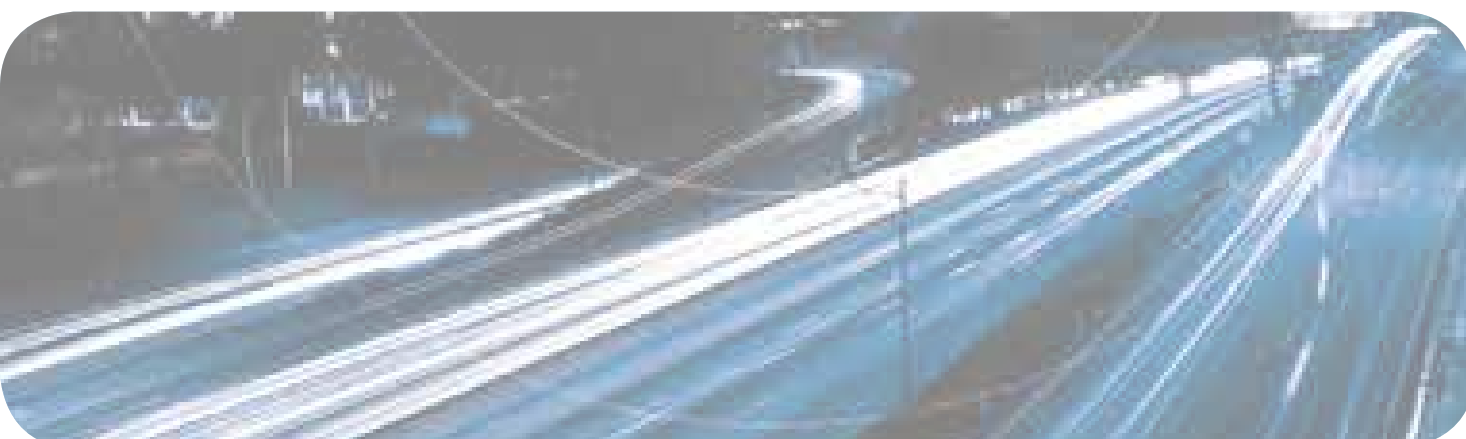


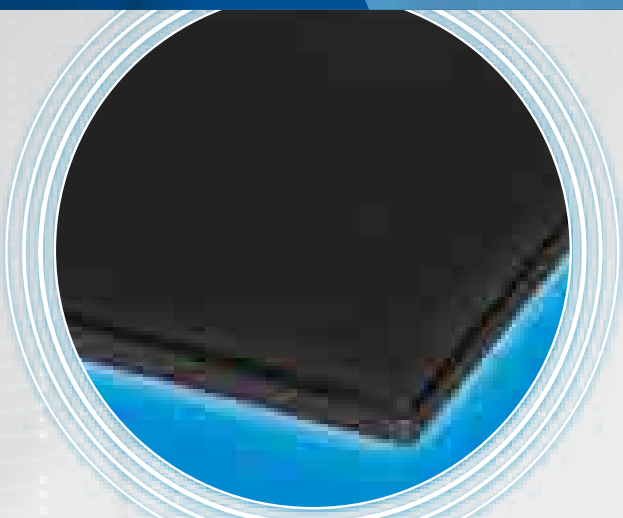
## GUIDE TO PRODUCTS & APPLICATIONS



WORK SECTOR	APPLICATIONS	SOUND INSULATION		SOUND ABSORPTION			DAMPING	SYSTEM
		K-FLEX K-FONIK ST GK	K-FLEX K-FONIK GK -GV*	K-FLEX K-FONIK OPEN CELL 160	K-FLEX K-FONIK OPEN CELL 240	K-FLEX K-FONIK B	K-FLEX K-FONIK GK - GV*	K-FLEX INDUSTRIAL
<b>BUILDING</b>	Perimeter walls, Dividing walls, Floor and Ceiling, Plumbing and draining system	●	●	●		●		
<b>HVAC</b>	Ventilation channels and industrial pipes	●	●	●		●	●	
<b>INDUSTRIAL and OIL &amp; GAS</b>	Piping, equipment and plants		●		●		●	●
<b>O.E.M.</b>	Machinery covers, Engine compartments	●	●	●	●	●	●	
<b>TRAIN &amp; SHIPBUILDING</b>	Engine and frames, Partitions, Technical installations		●				●	
<b>AUTOMOTIVE</b>	Engine noise insulation and frames, Sound absorption for the roof frame, Driver cabins.	●	●				●	

\*K-FLEX K-FONIK GV special viscoelastic mass with certification for train & shipbuilding industry.





SMOOTH ELASTOMERIC SOUND INSULATION PANEL IN VARIOUS THICKNESSES, COUPLED WITH A HIGH DENSITY ELASTOMERIC SHEET.

**N.B.: THE PRODUCT IS LEAD-FREE AND AS A RESULT DOES NOT REPRESENT A HEALTH RISK.**

## DESCRIPTION

**K-FONIK ST GK** is a viscoelastic acoustic insulation product made with partially reticulated polymers and fire-proof mineral fillers. Its special sound insulation characteristics make this an excellent product for traditional applications in the construction sector, eg. acoustic insulation of floors, brick walls and plasterboards.

## RANGE

### K-FONIK ST GK 074

→ 4 Kg/m<sup>2</sup> high-density elastomeric material  
→ 3 mm ST

### K-FONIK ST GK 072

→ 4 Kg/m<sup>2</sup> high-density elastomeric material  
→ 10 mm ST

### K-FONIK ST GK 070

→ 4 Kg/m<sup>2</sup> high-density elastomeric material  
→ 16 mm ST

## APPLICATIONS

**K-FLEX K-FONIK ST GK**, is ideal for sound insulation of fixed and false walls, ceilings and false ceilings, garages and acoustic cabins, drainage systems, theatres etc., and all types of sound insulation applications.

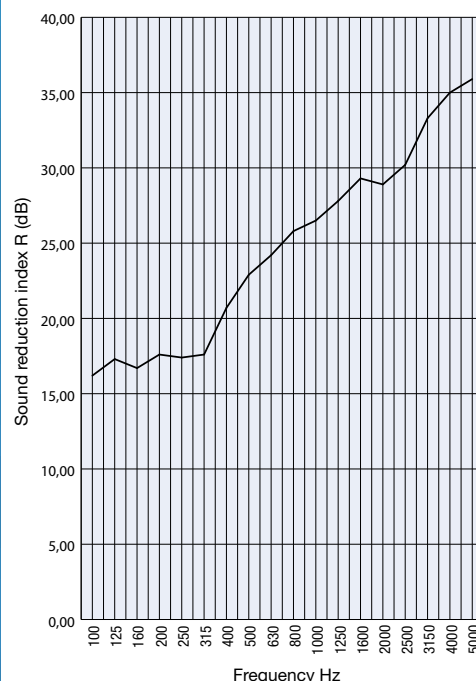
### K-FONIK ST GK ST 074

→ 3 mm ST  
→ 4 Kg/m<sup>2</sup> high-density elastomeric material  
→ 3 mm ST

## TECHNICAL DATA

Material type	flexible elastomeric foam with high-density elastomeric material
Weight	4,4 Kg/m <sup>2</sup> (K-FONIK ST GK 072)
Fire classification	EN 13501 - Bs3d0
Thermal conductivity	0.036 W/(m•K)
Temperature range	-40 °C +70 °C
Dimensions	2000 x 1000 mm
Surface	smooth
Base colour	black

## ACOUSTIC PERFORMANCE



K-FLEX ST GK 072

ST GK 072	
FREQ. Hz	R dB
100	16.2
125	17.3
160	16.7
200	17.6
250	17.4
315	17.6
400	20.7
500	22.9
630	24.2
800	25.8
1000	26.5
1250	27.8
1600	29.3
2000	28.9
2500	30.2
3150	33.3
4000	35.0
5000	35.9

$R_w (C; C_{tr}) = 26 (-1; -3) \text{ dB}$

# K-FLEX

# K-FONIK GK/GV



K-FONIK GK



K-FONIK GV

HIGH-DENSITY ELASTOMERIC ACOUSTIC INSULATING PANEL, AVAILABLE PRE-CUT TO SIZE FOR OEM AND INDUSTRIAL APPLICATIONS.

**N.B.: THIS PRODUCT IS LEAD-FREE WITH CLASS 0 REACTION TO FIRE\* AND THEREFORE DOES NOT REPRESENT A HEALTH RISK.**

**IT ALSO CARRIES A FIRE CLASSIFICATION IMO A653 (CE MARINE)**

## DESCRIPTION

**K-FONIK GK** is a viscoelastic acoustic insulation product made with partially reticulated polymers. Its special sound insulation characteristics make this an excellent product for traditional applications in the construction sector, eg. acoustic insulation of brick walls and plasterboards and for O. E. M. application.

**K-FONIK GV** is a viscoelastic acoustic insulation product made with partially reticulated polymers and fire-proof mineral fillers. Its special sound insulation characteristics make this product an excellent solution for the shipbuilding and railway sectors.

## RANGE

**K-FONIK GK**  
from 4 to 8 Kg/m<sup>2</sup>

→ High-density elastomeric material

**K-FONIK GV** from 4 to 8 Kg/m<sup>2</sup>

→ High-density elastomeric material

## APPLICATIONS

**K-FLEX K-FONIK GK** is ideal for sound insulation of fixed and false walls, ceilings and false ceilings, garages and acoustic cabins, machinery and equipment manufacturers and all types of sound insulating applications.

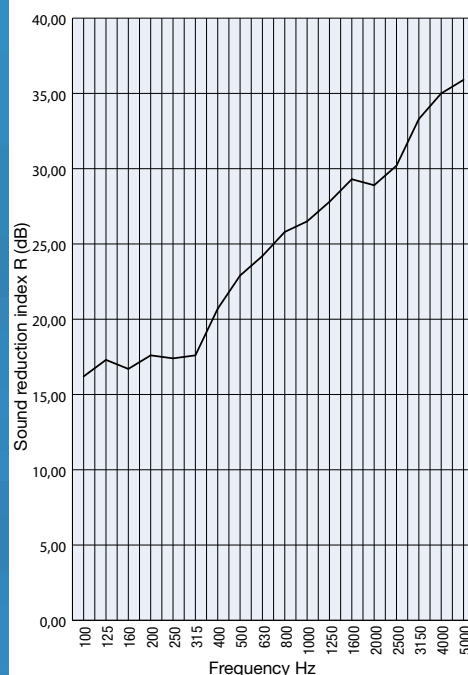
## TECHNICAL DATA

Material type	high density elastomeric material
Fire classification	EN 13501 - Bs3d0 <sup>1)</sup> , IMO A653 (CE MARINE) <sup>2)</sup> , FMVSS 302
Temperature	-40 °C +70 °C
Panel dimensions	1000 x 2000 and 1000 x 1200 mm Rolls 25 or 50 m
Surface	smooth
Weight	From 4 to 8 Kg/m <sup>2</sup>
Base colour	black
Density	2000 kg/m <sup>3</sup> (±10%)

<sup>1)</sup> only for K-FONIK GK on request

<sup>2)</sup> only for K-FONIK GV

## ACOUSTIC PERFORMANCE



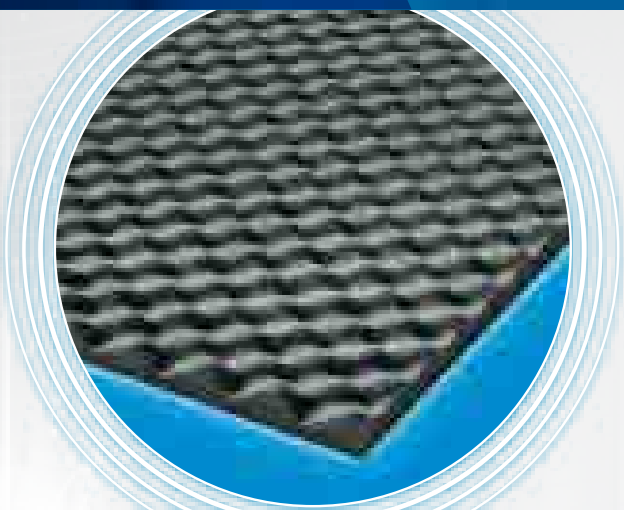
K-FLEX GK 4 Kg/m<sup>2</sup>

GK 4 Kg/m <sup>2</sup>	
FREQ. Hz	R dB
100	16.2
125	17.3
160	16.7
200	17.6
250	17.4
315	17.6
400	20.7
500	22.9
630	24.2
800	25.8
1000	26.5
1250	27.8
1600	29.3
2000	28.9
2500	30.2
3150	33.3
4000	35.0
5000	35.9

K-FONIK GK R<sub>W</sub> (C;C<sub>tr</sub>) = 26 (-1;-3) dB  
K-FONIK GV R<sub>W</sub> (C;C<sub>tr</sub>) = 27 (-1;-4) dB



# K-FLEX K-FONIK B



EMBOSSED  
SURFACE POLYURETHANE  
FOAM SHEET IDEAL FOR  
ACOUSTIC ABSORPTION.

## DESCRIPTION

**K-FONIK B** material is specifically designed for situations where sound absorption is the priority. It is made of open cell flexible polyurethane foam with a density of 25/30 kg/m<sup>3</sup>. It is also available in the **K-FONIK ST B** version made with rubber foam which has Class 0 reaction to fire characteristics.

## RANGE

### K-FONIK B20



### K-FONIK B30



### K-FONIK B40



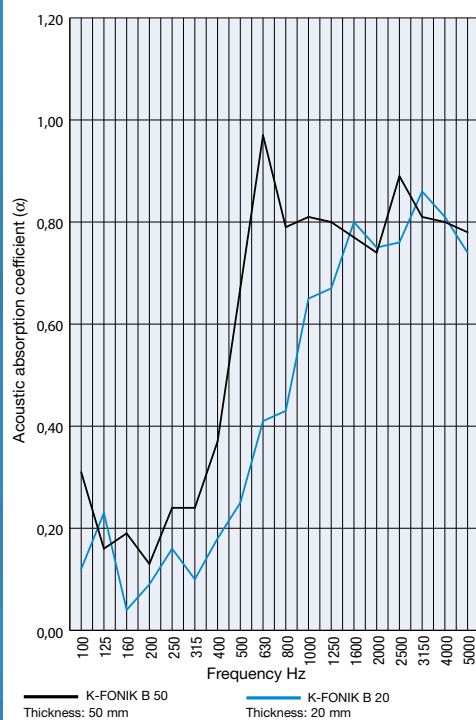
### K-FONIK B50



## APPLICATIONS

**K-FLEX K-FONIK B** is widely used in gyms, conference rooms, rifle ranges, recording studios, radio/television studios, moveable acoustic panels, engine rooms, etc.

## ACOUSTIC PERFORMANCE



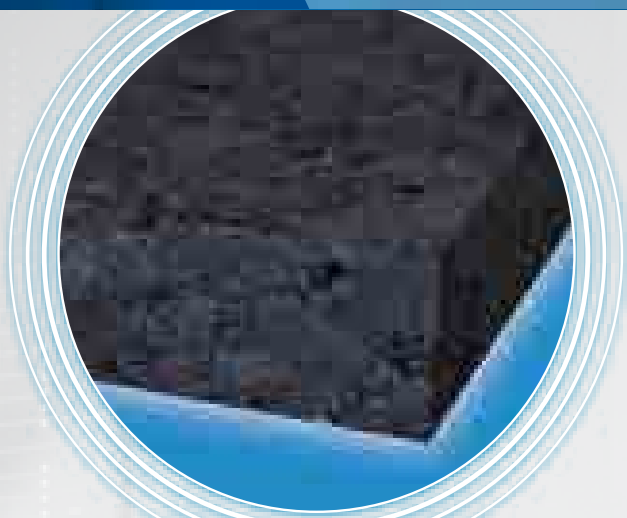
## TECHNICAL DATA

Material type	polyurethane foam / expanded rubber
Density	25 ÷ 30 Kg/m <sup>3</sup>
Fire classification	Class 0 (BS 476 PART 6/7) only ST B version with rubber foam; UL 94 - HF1
Temperature range	-40 °C +70 °C
Dimensions	1000 x 2000 mm - also available in rolls of different sizes
Surface	embossed
Thickness	from 20 to 50 mm
Base colour	dark grey

FREQ. Hz	B 20	B 50
	α	α
100	0.12	0.31
125	0.23	0.16
160	0.04	0.19
200	0.09	0.13
250	0.16	0.24
315	0.10	0.24
400	0.18	0.37
500	0.25	0.67
630	0.41	0.97
800	0.43	0.79
1000	0.65	0.81
1250	0.67	0.80
1600	0.80	0.77
2000	0.75	0.74
2500	0.76	0.89
3150	0.86	0.81
4000	0.81	0.80
5000	0.74	0.78
α W	0.28	0.62



# K-FLEX K-FONIK OPEN CELLS



OPEN CELL MATERIAL  
FOR SOUND ABSORPTION.  
IDEAL FOR ACOUSTIC  
INSULATION OF INDUSTRIAL  
PIPES.

## DESCRIPTION

**K-FLEX K-FONIK OPEN CELLS** is a thermal-acoustic insulation material, ideal for sound absorption applications. It combines excellent acoustic performance and insulation characteristics. Supplied in different formats and thicknesses, based on customer requirements.

## RANGE

### K-FLEX K-FONIK 160 - 240

→ from 10 to 350 mm

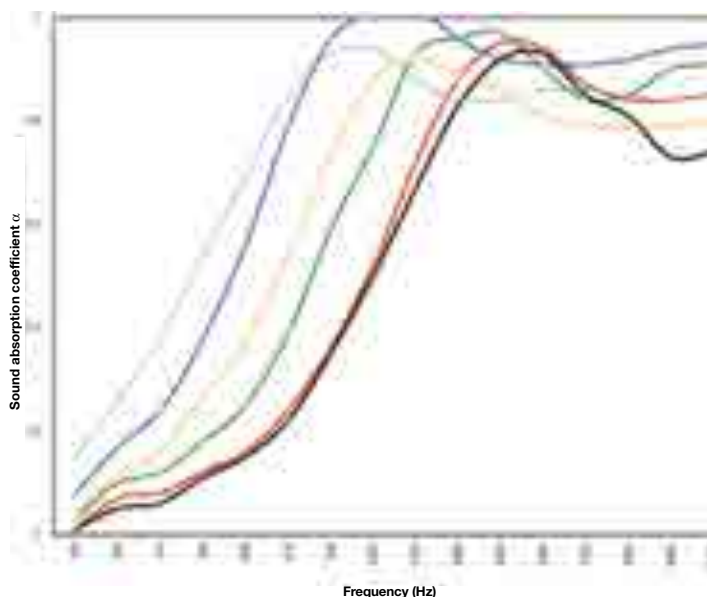
## APPLICATIONS

### K-FLEX K-FONIK OPEN CELLS

Sound absorption; industrial pipes.

## ACOUSTIC PERFORMANCE

Sound absorption coefficient  $\alpha$   
UNI EN ISO 354:2003 UNI EN ISO 11654:1998



## TECHNICAL DATA

Material type	flexible elastomeric foam
Density	160-240 Kg/m <sup>3</sup>
Thermal conductivity	K-FONIK OPEN CELL 240: 0,056 W/(m•K) K-FONIK OPEN CELL 160: 0,048 W/(m•K)
Fire	FMVSS 302, EN13501 CS3d0
Temperature	-40 °C +85 °C
Dimensions	see price list
Thickness	from 10 to 350 mm
Base colour	black
Modulus (mpa)	22 ± 3.7 (160) - 57.7 ± 8.0 (240)
Elongation to break (%)	114 ± 33 (160) - 140 ± 47 (240)

### Insertion Loss:

K-FONIK 160 15mm Rw=5 dB	K-FONIK 240 15mm Rw=10 dB
K-FONIK 160 25mm Rw=6 dB	K-FONIK 240 25mm Rw=14 dB
K-FONIK 240 10mm Rw=8 dB	

- K-FONIK OPEN CELL 160, 10 mm  $\alpha W = 0.25$
- K-FONIK OPEN CELL 160, 15 mm  $\alpha W = 0.30$
- K-FONIK OPEN CELL 160, 25 mm  $\alpha W = 0.45$
- K-FONIK OPEN CELL 240, 10 mm  $\alpha W = 0.25$
- K-FONIK OPEN CELL 240, 15 mm  $\alpha W = 0.40$
- K-FONIK OPEN CELL 240, 25 mm  $\alpha W = 0.55$

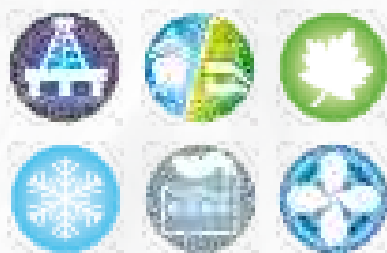


## K-FLEX ECO





Halogen  
Free



Elastomeric insulation for improved environmental safety.

$\mu \geq 3.000$  (EN 12086)  
 $\lambda \leq 0,038$  W/mK a 0 °C

EN 13468 Supervised  
no PVC - HCFC - CFC

### Applications:

Shipbuilding/Railways

Air-Conditioning

Refrigeration

Industrial Processes Up To 120 °C

## K-FLEX ECO

Today, it is no longer acceptable to manufacture goods without considering the safety of the environment. This increased environmental awareness, adopted by responsible operating sectors of today's society, has encouraged major innovations in development methods and consumer standards.

**L'ISOLANTE K-FLEX** is a leader in anticipating the needs of the insulation sector, with great emphasis on the ecological aspect. **K-FLEX ECO** is a real "safe and secure" answer to reducing energy consumption while at the same time protecting the environment.

# HALOGEN FREE

**This green elastomeric insulation material is formulated and produced without using halogens.**

Thanks to its composition, any fumes given off during a fire are transparent and non-toxic to anyone in the vicinity.

Approval and certification of product values are part of the company's strategy aimed at optimizing and continuously improving basic requirements.

This policy was rigorously applied to the manufacturing of **K-FLEX ECO**, making it an extremely interesting, effective and safe insulation product.



## HALOGEN FREE



# K-FLEX ECO

# K-FLEX ECO TECHNICAL DATA & APPLICATIONS



K-FLEX ECO



K-FLEX ECO - TECHNICAL DATA	
Temperature range	-165°C to +120°C*
Thermal conductivity $\lambda$ EN 12667 (DIN 52612) EN ISO 8497 (DIN 52613)	-20 °C = 0,036 0 °C = 0,038 +20 °C = 0,040 +40 °C = 0,042
Permeability EN 12086 (DIN 52615) $\mu$	$\mu \geq 3000$
Ecological data	Halogen free - PVC - CFC - HCFC Free
Corrosion risk	EN 13468, pH neutral
Marine approvals	R.I.N.A. - LR - DNV - M.M. ITALIANA CE-MARINE (Bureau Veritas) - US NAVY
Fume classification (toxicity)	IMO RES 61(67)
Fume density (NBS room)	$\leq$ DM 200
Colour	Green
Fire	Sheets: E (EN 13501-1) Tubes: D <sub>L</sub> - s2, d0 (EN 13501-1)

\* For temperatures of less than -50 °C, please consult our technical office.

L'ISOLANTE K-FLEX reserve the right to change data and technical requirements without notice.



## Shipbuilding

- Air-conditioning • heating • plumbing • waste pipes
- low pressure steam • sound-proofing



## Railways

- carriage air-conditioning systems
- braking system pipes • waste pipes
- carriage walls and ceilings



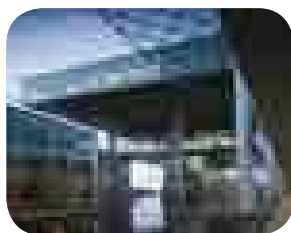
## Airports

- air-conditioning of aircraft in parking areas
- terminal air-conditioning and heating



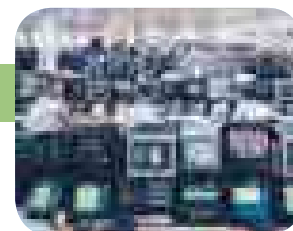
## Public Buildings

- schools • hospitals • museums • community centres • institutional headquarters



## Service Structures

- hotels • theatres • cinemas • television studios • exhibition centres • data processing centres • shopping centres
- management centres • sport centres • entertainment centres
- power stations • underground stations • science laboratories
- military bases and installations



## Production Facilities

- food • chemicals • computers • publishing • manufacturing

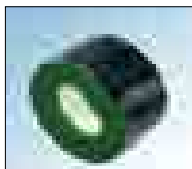
## R A N G E

Tubes 2m	THICKNESS:	DIAMETER:
	9 - 13 - 19 - 25 - 32 mm	from 10 to 114 mm
Tubes 2m PRECUT	THICKNESS:	DIAMETER:
	9 - 13 - 19 mm	from 12 to 89 mm
Sheets 1m	STANDARD THICKNESS:	ADHESIVE with reinforced mesh THICKNESS:
	10 - 13 - 19 - 25 - 32 - 40 - 50 mm	10 - 13 - 19 - 25 - 32 mm

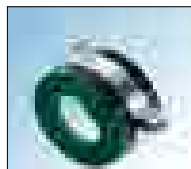
## A C C E S S O R I E S



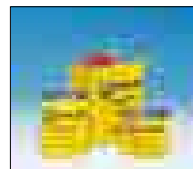
K-FLEX ECO  
anti-condensation,  
self-adhesive  
insulation tape



K-FLEX ECO  
insulation supports



K-FLEX ECO  
insulation supports  
with collar



Adhesives

## F I N I S H I N G S



K-FLEX AL CLAD  
K-FLEX COLOR  
K-FLEX IC CLAD  
K-FLEX IN CLAD



# REFERENCE LIST



K-FLEX ECO

**LA SCALA THEATRE - MILAN, ITALY -**  
K-FLEX ECO



**CAVOUR AIRCRAFT CARRIER - ITALY -**  
K-FLEX ECO



**K-FLEX ECO** can be used in all fields of insulation, especially in environments where high safety standards are of the utmost importance.

## MILITARY

### Cavour aircraft carrier

Horizon class frigate

Excelsior

## PASSENGER FERRIES

### Shipowner:

### Name:

MINOAN  
LINES

Knossos Palace, Festos Palace  
Olympia Palace, Europa Palace

TIRRENIA

Hull 6069, Hull 6070

GRIMALDI

Excelsior

## CRUISE LINERS

### Shipowner:

### Name:

H.A.L.  
Holland  
America Line

Zaandam, Volendam,  
Amsterdam, Zuiderdam,  
Oosterdam, Hull 6077 e 6078

Disney  
Cruise Line

Disney Wonder, Disney Magic

P&O

Sea Princess, Ocean  
Princess, Golden Princess,  
Star Princess, Hull 6067,  
Caribbean Princess

Carnival

Carnival Victory, Carnival  
Triumph, Carnival Conquest,  
Carnival Glory, Carnival  
Valour, **Carnival Dream**

Costa

Costa Fortuna, Costa Magica



# REFERENCE LIST



## RAILWAYS

Company	Installation Type:
TRENITALIA (FS)	ETR TRAINS insulation of ventilation system SLEEPING CARS air-conditioning system ceilings walls waste pipes LOCOMOTIVES hydraulic brake systems
INTERCITY TRAINS SNCF (FRENCH RAILWAYS)	GTV TRAINS AND CARRIAGES air-conditioning system RTP-UNDERGROUND Paris-CARRIAGES air-conditioning system
NORWEGIAN RAILWAYS	CARRIAGES Insulation against freezing pipes
SBB CFF FFS (SWISS RAILWAYS)	CARRIAGES air-conditioning system walls ceilings
BOSTON E S. FRANCISCO UNDERGROUND	CARRIAGES air-conditioning system



## AIR TRANSPORT

### Airports:

CAGLIARI  
OLBIA  
BUCAREST  
MALPENSA - HANGAR  
AND CARGO CITY  
EZISA-BUENOS AIRES  
ROME-FIUMICINO  
CATANIA  
NAPLES

### Theatres:

#### LA SCALA - MILAN

LA FENICE - VENICE  
AUDITORIUM - ROME  
PIER LOMBARDO - MILAN

### Shopping Centres

ETNA POLIS - Catania  
INTERPORTO - Nola  
CENTRO DIREZIONALE - Naples

### Hospitals

NEW HOSPITAL OF MALTA  
S.PAOLO AND S.RAFFAELE - MILAN  
BRESCIA  
BARI  
MODENA  
REGGIO EMILIA  
VARESE  
TREVISO  
SANTA CHIARA - TRENTO  
LIVORNO  
FOLIGNO  
MESTRE  
CASTELFRANCO VENETO





## K-FLEX ST



# K-FLEX ST



K-FLEX ST



K-FLEX ST/SK  
pre-cut pipe insulation  
with adhesive

K-FLEX ST sheets

K-FLEX ST tubes

Elastomeric insulation  
for all applications,  
both civil and industrial.

## Applications:

Air-conditioning  
Refrigeration  
Industrial processes  
Oil & gas

## K-FLEX ST

**K-FLEX ST** is suitable for all applications both civil and industrial that require the use of insulation material, providing a good quality product and value for money: refrigeration, air-conditioning, heating and plumbing, tanks, pipe fittings and water ducts.

## K-FLEX ST tubes

EN 13468 Supervised  
HCFC - CFC Free

## K-FLEX ST & ST/SK tubes

### T E C H N I C A L   D A T A

<b>Temperature range</b>	-165°C* max +110°C (-40°C max +85°C per ST/SK)	
<b>Thermal conductivity <math>\lambda</math> W/(m•K) EN 12667 (DIN 52612) - ENISO 8497 (DIN 52613)</b>	Thickness $\leq$ 25mm	Thickness > 25mm
	-20 °C = 0,031 0 °C = 0,033 +20 °C = 0,035 +40 °C = 0,037	-20 °C = 0,034 0 °C = 0,036 +20 °C = 0,038 +40 °C = 0,040
<b>Corrosion problems</b>	EN 13468; pH neutral (7 $\pm$ 1)	
<b>Permeability <math>\mu</math> EN12086 (DIN 52615)</b>	$\geq$ 10000	$\geq$ 7000
<b>Fire</b>	K-FLEX ST: Euroclass B <sub>L</sub> - s2, d0 (EN 13501-1)	
	K-FLEX ST/SK: Euroclass B <sub>L</sub> - s3, d0 (EN 13501-1)	

\* For industrial applications, product can be applied down to -198°C; for applications below -40°C please contact our technical department.

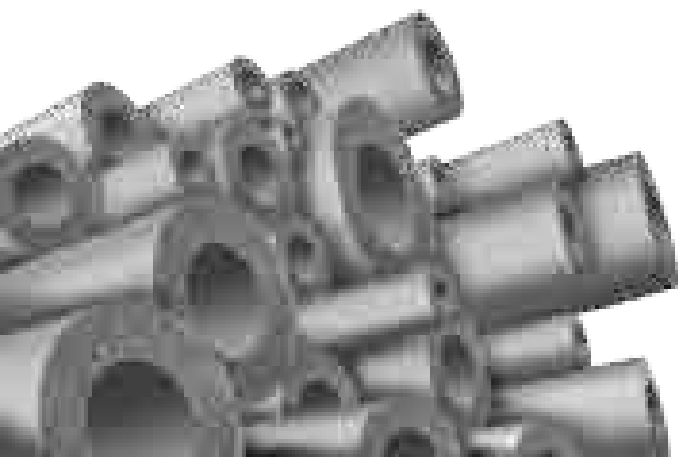
**L'ISOLANTE K-FLEX** reserves the right to change data and technical requirements without notice.

# K-FLEX ST TUBES



## K-FLEX ST tubes

K-FLEX ST is suitable for all applications both civil and industrial that require the use of insulation material, without neglecting the price/quality relationship: refrigeration, air-conditioning, heating and plumbing, tanks, pipe fittings and water ducts.



## R A N G E

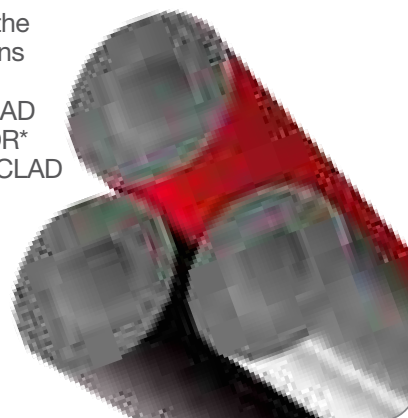
TUBES	LENGTH:	THICKNESS:	DIAMETER:
	2 m	6 - 9 - 13 - 19 - 25 - 32 - 40 - 50 - 55 - 60 mm	from 6 to 210 mm



## COVERINGS AND COATINGS

See details in the specific sections

K-FLEX AL CLAD  
K-FLEX COLOR\*  
K-FLEX IN/IC CLAD



\* also 2m pipes



## K-FLEX ST/SK tubes

The new ST/SK is a pre-cut elastomeric insulation with a special adhesive. The innovative technology is easy and quick to use. This new system is developed to save on installation time and reduce the use of other adhesives, improving work conditions.

## R A N G E

TUBES	LENGTH:	THICKNESS:	DIAMETER:
	2 m	9 - 13 - 19 - 25 - 32 mm	from 12 to 114 mm



## K-FLEX ST sheets

1000/1500 mm wide insulation sheets ideal for metal ducts and large dimensions pipes.

EN 13468 Supervised  
HCFC - CFC Free  
Fire: Euroclass B - s3, d0

## K-FLEX ST sheets

## TECHNICAL DATA

Temperature range	-165°C* max +85°C	
Thermal Conductivity $\lambda$ W/(m•K) EN 12667 (DIN 52612) - EN ISO 8497 (DIN 52613)	Thickness $\leq$ 25mm	Thickness > 25mm
	-20 °C = 0,031	-20 °C = 0,034
	0 °C = 0,033	0 °C = 0,036
	+20 °C = 0,035	+20 °C = 0,038
	+40 °C = 0,037	+40 °C = 0,040
Corrosion risk	EN 13468; pH neutral (7 $\pm$ 1)	
Permeability $\mu$ EN 12086 (DIN 52615)	$\geq$ 10000	$\geq$ 7000
Fire	Euroclass B - s3, d0 (EN 13501-1)	

\* For industrial applications, product can be applied down to -198°C; for applications below -40°C please contact our technical department.

L'ISOLANTE K-FLEX reserve the right to change data and technical requirements without notice.

# K-FLEX ST SHEETS



## K-FLEX ST sheets

Designed for the insulation of large surfaces. K-FLEX ST sheets, 1000/1500 mm in width, are ideal for the insulation of sheet aluminium ducts and pipes of large diameters. By reducing the number of sections required they simplify installation, saving on time and labour costs.

- EASY APPLICATION
- ECONOMICAL
- CONTINUITY OF INSULATION
- GUARANTEED ELASTICITY AND STABILITY

In all widths and thicknesses, standard (A) and self-adhesive (B)



## FINISHES

### K-FLEX ST COLOR SYSTEM

Elastomeric sheet with an external surface covered by a layer of pigmented water-based paint with UV protection. For colour specifications and further details, see the **K-FLEX COLOR SYSTEM** section. (A)

### K-FLEX ALU COVERING ON ST SHEETS

Elastomeric self-adhesive sheet with reinforced mesh and a smooth aluminium 80µ thick covering. (B)

### K-FLEX ST DUCT AL CLAD SYSTEM

Elastomeric self-adhesive sheet, with reinforced mesh and AL CLAD covering. See sections of **K-FLEX AL CLAD SYSTEM** for the suggested specific solutions (C)



## R A N G E

Sheets 1000mm	STANDARD THICKNESS:	ADHESIVE THICKNESS:
	6 - 10 - 13 - 16 - 19 - 25 - 32 - 40 - 50 - 60 mm	6 - 10 - 13 - 16 - 19 - 25 - 32 - 40 - 50 mm
Sheets 1500mm	STANDARD THICKNESS:	ADHESIVE THICKNESS:
	6 - 10 - 13 - 16 - 19 - 25 - 32 - 40 - 50 mm	6 - 10 - 13 - 16 - 19 - 25 - 32 - 40 - 50 mm

## K-FLEX ST DUCT

Elastomeric insulation sheets  
1500 mm width ideal  
for ducting systems.

Applications:  
-AIR-CONDITIONING  
-VENTILATION

$\mu \geq 7000$   
EN 13468 Supervised  
HCFC - CFC Free  
Fire: Euroclass B - s3, d0

## K-FLEX ST DUCT

### T E C H N I C A L   D A T A

Temperature range	-165°C max +85°C	
Thermal Conductivity $\lambda$ W/(m•K) EN 12667 (DIN 52612) - EN ISO 8497 (DIN 52613)	Thickness $\leq$ 25mm	Thickness > 25mm
	-20 °C = 0,031	-20 °C = 0,034
	0 °C = 0,033	0 °C = 0,036
	+20 °C = 0,035	+20 °C = 0,038
	+40 °C = 0,037	+40 °C = 0,040
Corrosion risk	EN 13468; pH neutral (7 $\pm$ 1)	
Permeability $\mu$ EN 12086 (DIN 52615)	$\geq 7000$	
Fire	Euroclass B - s3, d0 (EN 13501-1)	

**L'ISOLANTE K-FLEX** reserve the right to change data and technical requirements without notice.



## K-FLEX ST DUCT



### K-FLEX ST DUCT

**K-FLEX ST DUCT** is specifically produced for the insulation of ventilation and air-conditioning ducts, meeting all the necessary requirements in terms of structure and dimensions.

- EASY TO USE
- COST-EFFECTIVE
- MEETS SAFETY REQUIREMENTS

**ECONOMICAL:** flexible and easy to handle, it is made in measurements of 1500 mm in width to ensure easy installation on ducts.

**PRACTICAL:** the self-adhesive surface has been made rougher to improve its grip on the metal ducts.

**CONVENIENT:** its 1500 mm width cuts down on application time, reducing the final cost of pre-fabricated ducts.

**FLEXIBLE:** high elasticity helps attenuate vibrations that occur where there are joints and suspensions.



#### K-FLEX ST DUCT

Elastomeric self-adhesive sheet, with reinforced mesh. Width 1500 mm

## R A N G E

Sheets

HEIGHT:

1500 mm

THICKNESS:

6 - 8 - 10 - 12 - 15 - 20 - 30 mm



### FINISHES

#### K-FLEX ST DUCT AL CLAD SYSTEM (A)

Elastomeric self-adhesive sheet, with reinforced mesh and AL CLAD covering. Width: 1500 mm.

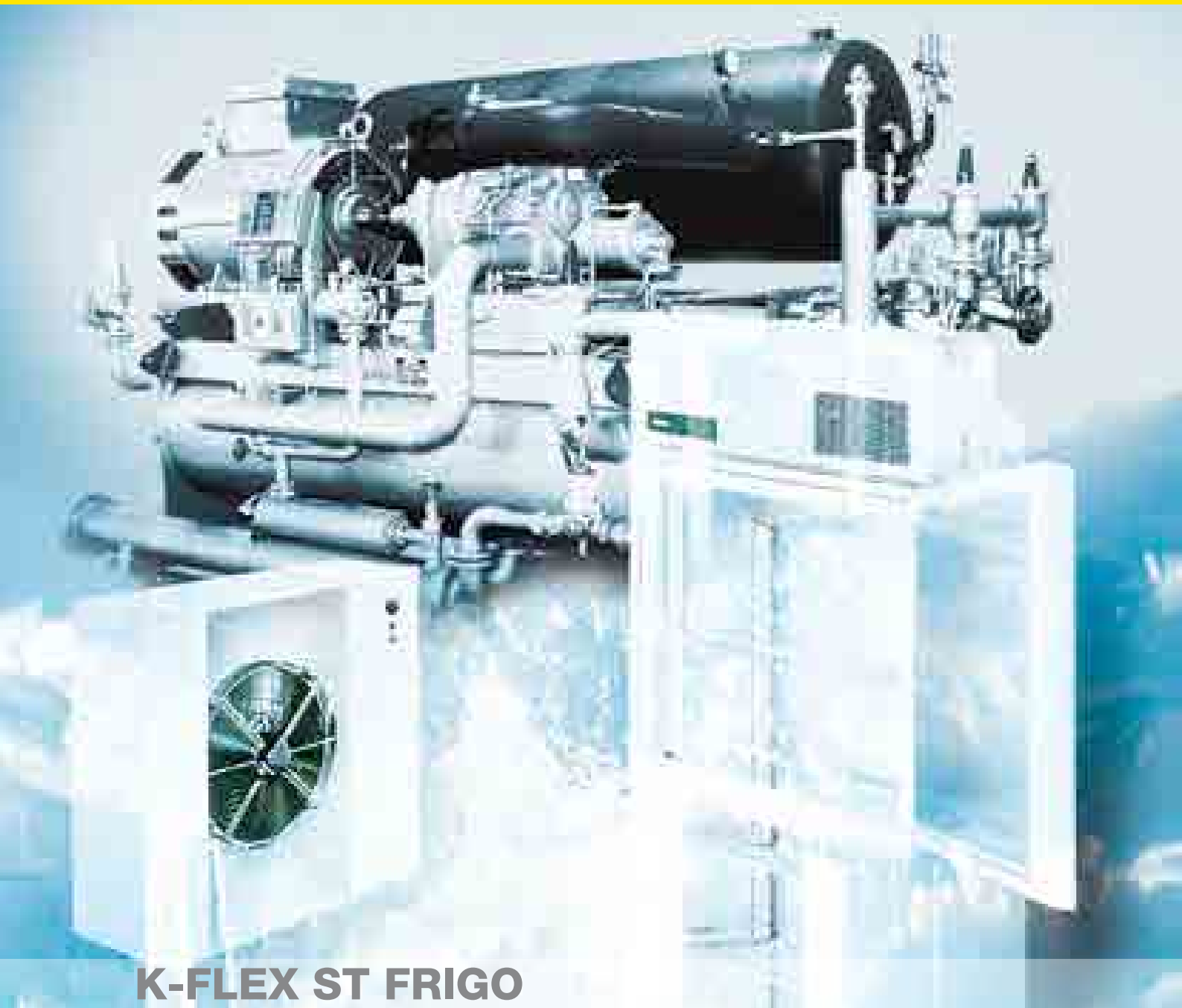
#### K-FLEX ST DUCT ALU

Elastomeric self-adhesive sheet with reinforced mesh and a smooth aluminium 80 µ thick covering. Width: 1500 mm.

#### K-FLEX ST DUCT COLOR SYSTEM (B)

Elastomeric self-adhesive sheet, with reinforced mesh and COLOR coating. Width: 1500 mm.





## K-FLEX ST FRIGO

### T E C H N I C A L   D A T A

<b>Temperature range</b>	-165°C* +110°C
<b>Thermal conductivity <math>\lambda</math> W/(m•K) - ENISO 8497 (DIN 52613)</b>	Thickness $\leq$ 25mm -20 °C = 0,031 0 °C = 0,033 +20 °C = 0,035 +40 °C = 0,037
<b>Permeability <math>\mu</math> EN12086 (DIN 52615)</b>	$\mu \geq 10000$
<b>Corrosion Risk</b>	EN 13468; pH neutral (7 $\pm$ 1)
<b>Fire</b>	Euroclass B <sub>L</sub> - s3, d0 (EN 13501-1)

\* For industrial applications, product can be applied down to -198°C; for applications below -40°C please contact our technical department.

**L'ISOLANTE K-FLEX** reserves the right to change data and technical requirements without notice.

# K-FLEX ST FRIGO



K-FLEX ST FRIGO

THE FUNCTIONAL AND USEFUL  
COOLING SOLUTION



Elastomeric insulation  
for the refrigeration and  
air-conditioning specialist.

## Applications:

Refrigeration  
Cooling and air-conditioning  
systems

$\mu \geq 10000^*$   
EN 13468 Supervised  
HCFC - CFC Free

\* Supervised permeability  $\mu \geq 7000$ ,  
Individual certification  $\mu \geq 10000$

## K-FLEX ST FRIGO

The revolutionary and exclusive packaging offers  
practical and economic benefits for both usage and  
distribution.

### User-friendly

An aperture in the box lid allows easy removal of the  
insulation whilst keeping the remaining product intact  
and in place.

### Precision cutting

The ruler printed on the edge of the box facilitates  
accurate measurement and precise cutting of the  
insulation required for the job. No more waste product;  
less use of glue and tape.

### Easy to transport

On request we can also supply K-FLEX ST FRIGO in  
industrial sized cartons: 800 x 800 x 400 mm

## R A N G E

Package 500x500x200	THICKNESS:	DIAMETER:
	6 - 9 - 13 mm	from 6 to 28 mm
Package 800x800x400	THICKNESS:	DIAMETER:
	6 - 9 mm	from 6 to 28 mm

THICKNESS		6	9	13
ø tubes		m/carton	m/carton	m/carton
inches	mm			
1/4"	6	50	40	26
5/16"	8	48	37	26
3/8"	10	46	34	23
1/2"	12	40	31	18
5/8"	15	38	27	17
3/4"	20	30	23	15
7/8"	22	23	19	14
1 1/8"	28	20	14	10



for high temperatures  
**K-FLEX**  
**SOLAR HT**

## K-FLEX SOLAR HT

### T E C H N I C A L   D A T A

Temperature range	+150°C
Thermal conductivity $\lambda$ W/(m•K) EN ISO 8497 (DIN 52613) EN 12667 (DIN 52612)	+0 °C = 0.040
Corrosion Risk	EN 13468, pH neutral
Fire	Tube: E (EN 13501-1) Sheet: E (EN 13501-1)

L'ISOLANTE K-FLEX reserves the right to change data and technical requirements without notice.

# K-FLEX SOLAR HT



K-FLEX SOLAR HT



Elastomeric Insulation  
for high temperatures

## Applications:

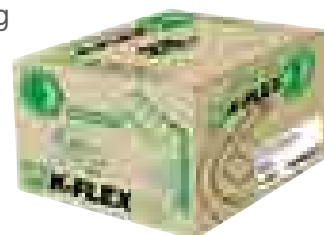
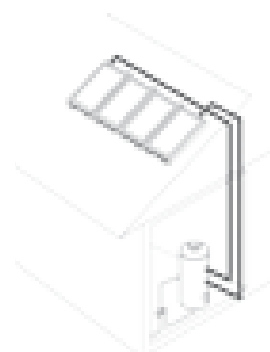
Solar Panels  
Low pressure steam or industrial  
processes up to 150 °C

## K-FLEX SOLAR HT

The rational and convenient  
solution for solar panels and  
industrial processes up to 150 °C.

A new, revolutionary box,  
tailor-made for the client, offering  
practical and economical  
advantages  
for use and distribution.

**Box dimensions:**  
395 x 580 x 580 mm



## R A N G E

## F I N I S H I N G

Coils	THICKNESS:	DIAMETER:
	13 - 19 mm	15 - 18 - 22 mm
Tube 2 m	THICKNESS:	DIAMETER:
	13 - 19 - 25 - 32 mm	from 10 to 89 mm
Sheet 1000 mm	THICKNESS:	
	10 - 13 - 19 - 25 - 32	



K-FLEX AL CLAD

K-FLEX ALU



## K-FLEX EC / EC ADHESIVE / EC-H ROLLS

### T E C H N I C A L   D A T A

<b>Temperature range</b>	<b>+110°C (+85°C EC ADHESIVE)</b>	
<b>Thermal conductivity <math>\lambda</math> W/(m•K) EN 12667 (DIN 52612) - ENISO 8497 (DIN 52613)</b>	<b>Thickness <math>\leq</math> 25mm</b>	<b>Thickness <math>&gt;</math> 25mm</b>
	-20 °C = 0,031	-20 °C = 0,034
	0 °C = 0,033	0 °C = 0,036
	+20 °C = 0,035	+20 °C = 0,038
	+40 °C = 0,037	+40 °C = 0,040
<b>Corrosion risk</b>	EN 13468; pH neutral (7 $\pm$ 1)	
<b>Permeability <math>\mu</math> EN12086 (DIN 52615)</b>	$\geq$ 7000	
<b>Fire classification</b>	Euroclasse B <sub>L</sub> - s3, d0 (EN 13501-1)	

*L'ISOLANTE K-FLEX reserves the right to change data and technical requirements without notice.*



# K-FLEX EC



K-FLEX EC-H ROLLS

K-FLEX EC  
Standard length 2 m

K-FLEX EC AD  
PRE-CUT EC  
ADHESIVE TUBES



## Applications:

Heating and plumbing  
Air-conditioning

$\mu \geq 7000$

EN 13468 Supervised

HCFC - CFC Free

Fire: Euroclass B<sub>L</sub> - s3 d0

with **K-FLEX  
EC ADHESIVE**  
SAVING ON  
INSTALLATION  
TIME

up to  
**50%**

## R A N G E

Tubes2m

**THICKNESS:**

6 - 9 - 13 - 19 - 25 - 30 -  
40 - 50 - 55 - 60 mm

**DIAMETER:**

from 10 to 168 mm

## K-FLEX EC



**K-FLEX**

# K-FLEX EC-H ROLLS



ROLLS  
Box Dimensions:  
485 x 485 x 285 mm

## The intelligent solution for plumbing

- New, practical packaging designed to be user-friendly
- Easy assembly due to the high flexibility and elasticity of the product
- Reduced scrap
- High performance insulation

## K-FLEX EC-H ROLLS

### Ease of use

An aperture in the box lid allows easy removal of the insulation whilst keeping the remaining product in place.

### Precision cutting

The ruler printed on the edge of the box facilitates accurate measurement and precise cutting of the insulation required for the job.

No more waste product; less use of glue and tape.

### Better protection for the insulation in the work place

No more wasted material caused by breakage or damage during transport.

## R A N G E

EC-H Rolls	THICKNESS mm	6	9	13
	Ø Tube mm	m/carton	m/carton	m/carton
	6	90	60	
	8	80	56	
	10	70	51	35
	12	60	50	30
	15	57	41	26
	18	45	35	25
	20	45	35	23
	22	35	29	21
	28	30	21	15
	35			12





# K-FLEX EC ADHESIVE



with **K-FLEX EC  
ADHESIVE**  
SAVING ON  
INSTALLATION TIME

up  
to **50%**



**NEW FAST ADHESIVE  
SYSTEM**

## NEW

fast adhesive system

Easy Handling

**Save 50%**

on installation time

Convenient built-in tabs  
for easy installation

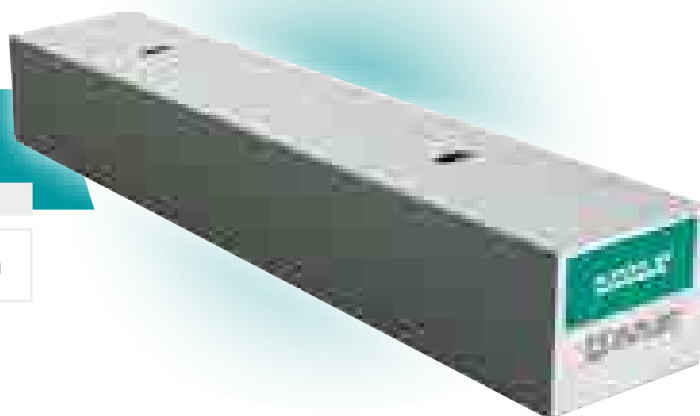
## K-FLEX EC ADHESIVE

The new **EC ADHESIVE** is manufactured with a factory-applied specially formulated bonding adhesive. The revolutionary technology is pre-slit with convenient built-in tabs applied on both sides, making the pipe insulation convenient and quick to install.

The new **EC ADHESIVE** has high performance characteristics thanks to the new self-adhesive system which significantly reduces the use of contact adhesives, thus allowing for improved working conditions and compliance with safety requirements.

## R A N G E

Tubes 2 m	THICKNESS:	DIAMETER:
	9 - 13 - 19 mm	from 6 to 114 mm





## 3M PRODUCTS FOR FIRESTOPPING

**K-FLEX** is pleased to announce a new product range in partnership with **3M**. The continuous search for innovation and the creation of cutting-edge technology and products, makes 3M the company that best meets the needs of passive fire protection installations.

**Comprehensive fire protection includes fire detection, fire containment and fire suppression. 3M Fire Protection Products address fire containment and are an integral part of a well designed fire protection system. Our understanding of the spread of fire, smoke, and toxic gases helps us continue to create preventative and affordable firestopping solutions.**

For more information and the complete range of products please visit our website: [www.kflex.com](http://www.kflex.com)

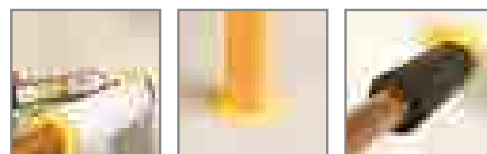
## Watertight Sealants

### 3M™ FIRE BARRIER IC15WB SEALANT

Affordable UL, general-purpose sealant approved up to 4-hours when used with plastic and metal pipes. Approved with K-FLEX thermal insulation.

- > Provides up to 4-hours
- > CPVC compatible
- > Superior adhesion – bonds to concrete, metals, wood, plastic and cable jacketing
- > Intumescent – expands when heated to seal around items consumed by fire

CE  
ETA 09/0325



## Service Penetration

### 3M™ FIRE BARRIER TUCK-IN WRAP STRIPS

3M™ Fire Barrier Tuck-In Wrap Strips are designed for use with PVC, PVCc, PE and PP plastic pipes penetrating through concrete floors, block and concrete walls, and gypsum stud walls.

- > Intumescent
- > Adhesive closure tab for easy installation
- > Expands 100x in volume
- > Wrap Strip pre-cut to nominal pipe size



EN-1366-1: UP TO EI 240

### 3M™ FIRE BARRIER PLASTIC PIPE DEVICE

Use for firestopping penetrating items such as plastic pipe and cables in new and retrofit installations.

- > Ultra-fast anchoring system secures the device to most substrates without power tools
- > Proven technology – intumescent action quickly seals off the penetrating item in a fire



TEST EN-1366-3

### 3M™ FIRE BARRIER DUCT WRAP 615+

Manufactured with a man-made vitreous spun fibre, a calcium-magnesium silicate (CMS) wool technology which is bio-soluble, allowing for low thermal transfer properties in a lightweight, low profile, easy to apply product.

Roll dimensions: 610 mm x 7,62 m (4,64 m<sup>2</sup>)  
Thickness: 38 mm

- > Lightweight 96 kg/m<sup>3</sup> and thin 38 mm for easier application
- > Broadest and most economical tested duct hanging support system in the industry
- > Up to 2 hour fire protection



EN-1366-1: UP TO EI 240

### 3M™ FIRE BARRIER SELF-LOCKING PILLOWS

Interlocking strips hold pillows securely together yet release easily for retrofit or reuse – just remove and replace pillows as needed.

- > Easy to remove and reuse
- > Easy to install
- > Excellent aging properties
- > Available in 3 formats: 51 x 102 x 229 mm (small)  
51 x 152 x 229 mm (medium)  
76 x 152 x 229 mm (large)
- > VOC Free



CE  
ETA 10/0015



# K-FLEX ACCESSORIES

**Complete range** of solutions  
for the installers





### PVC



#### Measurements

Length: 25 m  
Width: 1 m

### K-FLEX PVC RS 590 SHEET

A rigid PVC self-rolling sheet with a smooth grey surface. The sheet adheres perfectly to all cylindrical pre-insulated surfaces. Light and easy to use, this non-drip self-extinguishing product protects the insulation as well as enhancing overall external appearance. To maintain the product features intact, in the winter season the rolls should be stocked at room temperature for 24 hours prior to their use.

#### Use:

It is used as a protective covering and to enhance the external appearance of large and small cylindrical pipes insulated with elastomeric material, glass wool mats, rock wool mats, polyurethane and polystyrene pipe coverings.

#### Application:

- Measure and cut a section of the PVC sheet based on the circumference of the insulation, leaving an excess of a few centimeters for overlapping the joining edges.
- Wrap the sheet around the insulation
- Seal the borders with plastic rivets (see reference in the section "components: fixing products").

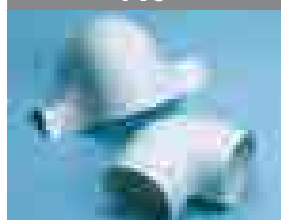


### TECHNICAL CHARACTERISTICS

Base	Rigid PVC
Fire	Homol. M1700C50CD100009 - self-extinguishing
Colour	Standard light grey
Packaging	Rolls
Sheet thickness	0.30 mm ÷ 0.35 mm
Temperature range	from -25 °C to +70 °C
Thermal conductivity $\lambda$	0.16 W/(m•K)
Permeability to vapour $\mu$	1.0 gm <sup>2</sup> 24h Pa



### PVC



### K-FLEX PVC 200 type W ELBOWS

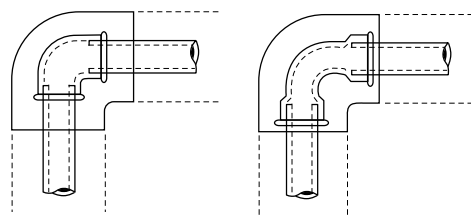
90° single-piece elbows in laminated plastic. Apart from enhancing the overall appearance of the insulated part, they increase protection against impact.

#### Application:

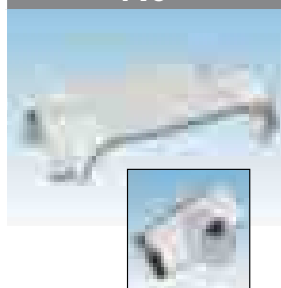
After having taken the measurements and having chosen the suitable type of elbow, place it onto the part to be covered. The internal borders should overlap to allow for fastening with the appropriate plastic rivets (see the section "components: fixing products").

#### Measurements:

Thicknesses mm: 20, 25, 30, 40, 50, 70, 80, 90  
Tube diameters mm: from 17 to 114; inches: from 3/8" to 4"



### PVC



### K-FLEX PVC type T

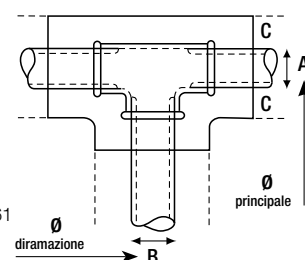
Laminated plastic PVC singlepiece T sections. Ideal for protecting insulated pipes of medium and large diameters.

#### Application:

The external diameter of the PVC T section also includes the thickness of the insulation.  
E.g.: to cover a pipe with a 76 mm Ø (A-B), and a 32 mm thick insulation (C), a 140 x 140 type should be ordered.

#### Measurements:

External diameter (main./branch.) mm: from 52/52 to 245/245 from 67/61 to 108/61 from 108/67 to 245/218



### PVC



### K-FLEX PVC type SE 90° ELBOWS

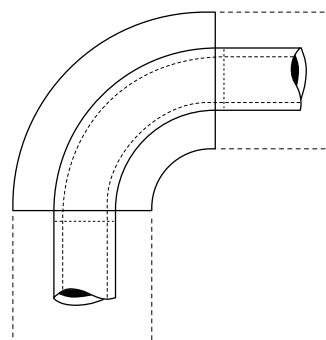
Single piece 90° plastic sheet elbows. Apart from improving overall appearance, the product provides protection against UV rays and impact.

#### Application:

After having taken the measurements, choose the suitable elbow and apply it to the part to be insulated. The internal borders will overlap to allow sealing with the special plastic rivets (see the section "components: fixing products").

#### Measurements:

Thicknesses mm: 20, 25, 30, 40, 50, 60, 70, 80, 90, 100  
Tube dimensions mm: from 12 to 356; inches: from 3/8" to 14"



**K-FLEX**

# ACCESSORIES - ALU

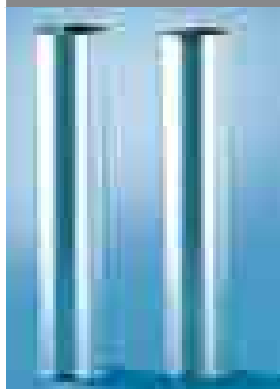
**ALU****K-FLEX ALU EMBOSSED R 200**

Self-wrapping embossed protection sheet in rolls of 99.5% pure aluminium.  
 Sheet thickness 0.1 and 0.2 mm  
 Supplied in 1 m wide rolls

**Properties:** the product grips perfectly to all cylindrical pre-insulated surfaces, it is light, easy to handle, protects the insulation and enhances the overall appearance. It is incombustible.

**Possibilities of use:** used as a protective covering, it also improves the overall appearance of small and large cylindrical pipes insulated with elastomeric, fibre-glass mattresses, mineral wool, polyurethane and polystyrene.

**Application:** if not already pre-cut, cut the sheet to the required circumference. Wrap the sheet around the insulation, seal the longitudinal edges with adhesive foil tape and plastic rivets.

**ALU****K-FLEX BLECH MT-CU**

99.5% PURE ALUMINIUM SHELL and 90° ELBOWS  
 with a thickness ranging from 0,6 and 0,8.

MT 500: male and female ball swaged edges calendered tube, with reinforced length-wise drilled sealing system.

**Measurements:**

Tubes Ø 70 = Length 500 mm  
 All the others = Length 1000 mm

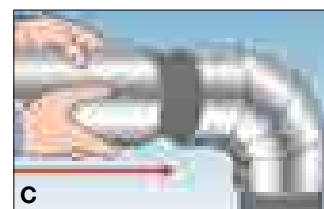
CU 501: 90° preformed segmented elbows with female-female ball swaged edges.

**Application on tubes:**

- The MT 500 tube diameter is slightly greater than that of the corresponding CU 501 elbow, which makes the connection between the two parts much easier.
- The edges of the joints are fixed together by using the short screws in the holes provided.

**Application of CU501 elbows:**

- A - Open the segments of the elbow and place them around the insulated pipe.  
 B - After the sections have been correctly positioned, seal the elbow with short screws using the holes provided.  
 C - Connect the MT 500 tube by attaching male edge to female edge.





### TAPES



### VINYL K-FLEX BAND

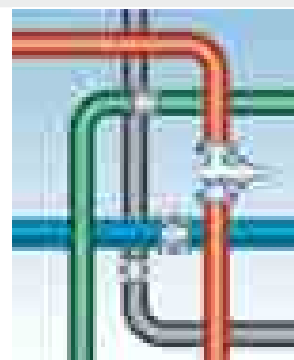
Flexible, robust and resistant to external agents, used for covering pipes insulated with elastomeric insulation or other materials. The small roll sizes allow for applications even in tight and narrow spaces. The wide range of colours available allows for a correct colour-coding of pipes, in compliance with the law.

#### Colours:

red  
green  
blue  
grey (K-Pack RS 590 type)  
light grey  
black

#### Measurements:

Thicknesses mm: 10/100  
Lengths m: 50, 25  
Width cm: 10



### TAPES



### K-FLEX GUTTAGENA PVC BAND

Twice the thickness compared to the previous range, it is ideal for finishing PVC sheet insulation coverings (eg. K-FLEX PACK RS 590). The GUTTAGENA band is available in one colour, light grey, and is matt finished.

#### Measurements:

Thicknesses mm: 20/100  
Lengths m: 50  
Widths mm: 50, 100



### TAPES



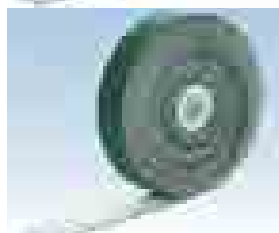
### K-FLEX ANTI-CONDENSATION TAPES

#### ANTI-CONDENSATION TAPES

Black, reinforced self-adhesive closed-cell elastomeric foam tape, with a disposable protective lining.

#### Measurements:

Thicknesses mm: 3, 6  
Lengths m: 10, 15  
Widths mm: 50, 75, 100



#### ECO ANTI-CONDENSATION TAPE

Green, reinforced self-adhesive closed-cell elastomeric foam tape (ECO), with a disposable protective lining.

#### Measurements:

Thicknesses mm: 3  
Lengths m: 15  
Widths mm: 50



#### K-FLEX ANTI-CONDENSATION COLOR TAPE

Self-adhesive, reinforced closed-cell elastomeric foam tape with COLOR SYSTEM coating and a disposable protective lining. Available in the range of standard RAL colours.

#### Measurements:

Thicknesses mm: 3, 6  
Lengths m: 15, 7, 5  
Widths mm: 50, 100

#### Range of 8 stock colours:

	RAL 5012 blue		RAL 3000 red
	RAL 6032 green		RAL 9011 black
	RAL 7035 grey		RAL 1019 sand
	RAL 9002 white		RAL 3015 pink



#### K-FLEX NA 310 TAPE

Rubber anti-condensation tape with embossed aluminium sheet. Black, closed-cell elastomeric foam tape, 3 mm in thickness, with, on the underside, a reinforced self-adhesive mesh and a disposable protective lining, and a surface covered by 0.05 mm thick embossed aluminium foil. Fire - Class 0 BS 476 PT 7

#### Measurements:

Thicknesses mm: 3  
Lengths m: 10, 15, 20  
Widths mm: 50, 100



**K-FLEX**

# ACCESSORIES - TAPE

**TAPES****ALUMINIUM TAPE****NAREINFORCED ALU AR 107 TAPE****Reinforced self-adhesive tape**

99,9% aluminium, self-adhesive 0,30 µ tape, reinforced with fibreglass, with a disposable protective lining.

Fire - Class 0 BS 476 PT 7

Suitable for endcappings, pipe joints, ventilation ducts and other elements insulated with aluminium sections.

**Measurements:**

Thickness: 30 µ

Lengths m: 50

Widths mm: 50, 75, 100

**ALU AA 130 TAPE****Smooth aluminium self-adhesive tape for covering joints**

Pure aluminium, self-adhesive 30 µ tape, with a smooth, reflective, adhesive surface on one side and a disposable protective lining.

Fire - Class 0 BS 476 PT 7

Suitable for endcappings, pipe joints, ventilation ducts and other elements insulated with aluminium sections.

**Measurements:**

Thickness: 30 µ

Lengths m: 30

Widths mm: 50, 75, 100

**BLACK ALU TAPE****Black aluminium self-adhesive tape for covering joints**

Pure aluminium, self-adhesive 30 µ tape with a smooth surface and a disposable protective lining.

**The tape finishing appears the same as the elastomeric surface.**

Suitable for endcappings, pipe joints, ventilation ducts and other elements insulated with K-FLEX elastomeric insulation.

Fire - Class 0 BS 476 PT 7.

**Measurements:**

Thickness: 30 µ

Lengths m: 50

Widths mm: 30, 50, 75, 100

**WHITE ALU TAPE****White aluminium self-adhesive tape for covering joints**

Pure aluminium, self-adhesive 30 µ tape with a smooth surface and a disposable protective lining.

Fire - Class 0 BS 476 PT 7

Suitable for endcappings, pipe joints, ventilation ducts and other elements insulated with laminated aluminium and/or K-FLEX insulation.

**Measurements:**

Thickness: 30 µ

Lengths m: 50

Widths mm: 30, 50, 75, 100

**TAPES****PVC AT 070 SELF-ADHESIVE TAPE**

Black/grey PVC self-adhesive tape for covering joints.

**Measurements:**

Length m: 25

Widths mm: 25, 38, 50

**PE INSULATION TRIMMING**

Self-adhesive closed-cell wired foam PE packing, used to cover the seal flange in air-conditioning ducts.

**Measurements:**

Thickness mm: 3

Length m: 20

Widths mm: 15, 20, 25

**BITUMINOUS CONGLOMERATE INSULATION TAPE**

Made from a mixture of synthetic rubber, bitumen and cork powder. It is ideal for preventing condensation forming on pipes. No further gluing is required because the tape is self-adhesive and sticks firmly to all surfaces.

**Measurements:**

Thickness mm: 3

Length m: 9,15

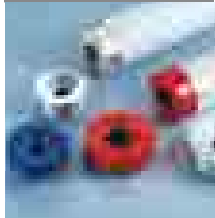
Widths mm: 50





### COMPONENTS

### ALUMINIUM ENDCAPPING IN ROLLS



Special endcapping in ribbed aluminium for sealing the ends of insulated pipes.

Available in the following colours: SILVER, LIGHT GREY, BLACK, BLUE AND RED.

Length of rolls - 10 m.

The different colours make it easier to identify the various pipes of a system.

#### Measurement:

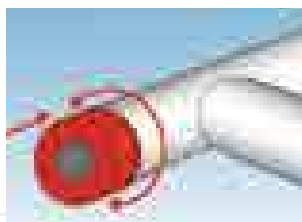
Internal/external  $\phi$  mm: 18x32,  
23x32, 28x32, 38x42, 48x42,  
58x42



Place a cap of insulating material over the end of the pipe.



Cut a strip of the endcapping long enough to wrap around the circumference of the pipe covering.



Wrap the endcapping around the end of the insulated pipe and around the edges of the pipe covering.



Fix the endcapping to the pipe covering with the correct selfadhesive tape.



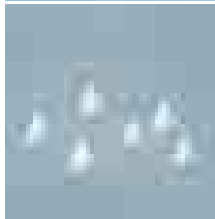
### COMPONENTS

### FASTENING PRODUCTS



Important for correctly fastening PVC and AL CLAD sheets.  
PLASTIC RIVETS: box of 100 WHITE and GREY rivets.  
PUNCH: straight/angular

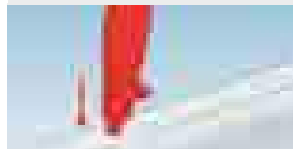
**K-FIX.** Galvanized steel installation hangar spike with a 50x50 mm base. With adhesive and nonadhesive surface, with a 2,7 mm diameter stick pike, and a self-blocking 30 mm diameter disc.



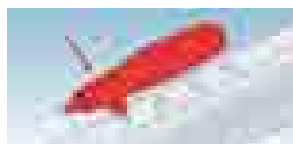
It can be applied to flat metal surfaces for fastening insulation material in sheet or roll form (mineral wool, polyethylene, etc.). Strongly recommended for air-conditioning ducts.

Temperature range  
min/max +10 °C/ +80 °C.  
Supplied in boxes of 100 pieces.  
Length of pins - from 19 to 114 mm.

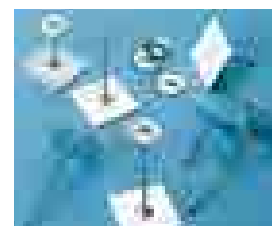
### INSTRUCTIONS FOR USE on PVC and AL CLAD



Punch holes along the overlap of the sheet, going through both layers.



Insert the plastic rivets in the holes, pressing them firmly into the insulation layer.



Apply the chosen insulation and insert the self-locking disc. If the shank exceeds the thickness of the insulating material, cut away the excess. Non-adhesive K-FIX: weld the plate to the metal surface.

# K-FLEX ACCESSORIES

**K-FLEX**

# ACCESSORIES - COMPONENTS

**COMPONENTS****SPECIAL THINNERS FOR K-FLEX ADHESIVES**

Before covering the surfaces to be insulated, it is advisable to clean them with the special K-FLEX thinners which, thanks to its composition, is also suitable for use with K 414, K 420 or K 425 adhesives. Cleaning of all surfaces with the special K-FLEX thinners also improves the performance of the adhesives. The special K-FLEX thinners can be also used for cleaning brushes and spatulas used to spread the glue.

Available in 1 litre tins.

**COMPONENTS****K-FLEX GLUES****INDICATED CONSUMPTION OF 1 LITRE OF ADHESIVE**

K-FLEX K 414, K 420 and K 425 glues have been specifically designed for use with K-FLEX elastomeric foam insulation material.

The securely bonded surfaces and joints are resistant to ageing and atmospheric agents, and preserve the technical characteristics of the insulating material.

**K 414 ADHESIVE** in tins of: 0.5 - 0.8 - 2.6 litres

**K 420 ADHESIVE** in tins of: 0.26 - 1 - 2.6 litres

**K 425 ADHESIVE** in tins of: 0.85 litre (complete with glue activator)

**TUBES**

thickness mm 9	every 1.350 m
thickness mm 13	every 500 m
thickness mm 19	every 300 m
thickness mm 25	every 220 m
thickness mm 32	every 180 m
thickness mm 40	every 139 m

**GLUED TO THE HEADS**

every 1.350 m
every 500 m
every 300 m
every 220 m
every 180 m
every 139 m

**GLUED LENGTHWAYS**

every 150 m
every 100 m
every 80 m
every 60 m
every 40 m
every 27 m

**SHEETS:** 1 litres every 7m<sup>2</sup>

L'ISOLANTE K-FLEX does not accept responsibility for different values to those indicated.

**COMPONENTS****K-FINISH PAINT**

K-FINISH is a water-based paint for coverings on internal and external installations insulated with K-Flex materials.

With its polymerized acrylic base, it does not pollute and does not give off odours, and is particularly recommended for all indoor uses. Quick drying, it offers excellent protection. Coats of white paint, applied over a layer of K-FINISH will maintain their colour even in dark environments. The colours are resistant to light.

It is advisable to paint the surface of externally insulated pipes to protect them against harsh weather conditions and UV rays. For further protection it is advisable use a double layer of K-FINISH paint. Available in 2.5 litre tins, and on request, in various colours.

**COMPONENTS****K-FLEX COLOR PAINT - Coloured water-based paint for retouching**

Special paint for retouching the surfaces of COLOR coverings, scratched or damaged during installation.

The paint, ready for use, should be applied with a soft brush.

Available in 0.5 litre tins.

**range of 8 stock colours:**

	RAL 5012 blue		RAL 3000 red
	RAL 6032 green		RAL 9011 black
	RAL 7035 grey		RAL 1019 sand
	RAL 9002 white		RAL 3015 pink


**COMPONENTS****K-FLEX ADHESIVE DISPENSER**

A useful accessory that controls flow and helps spread adhesives evenly on insulation surfaces, avoiding having to continuously dip the brush into the tin of adhesive.



The adhesive correctly diluted, is manually pumped through the brush.

# COMPONENTS / INSULATING SUPPORTS



COMPONENTS	K-SIL SILICONE 1209	
	Available in Alu color, 310 ml cartridges Recommended for al K-FLEX AL CLAD SYSTEM applications	
	<b>SIMSON ISR 70-03 MARINE SILICONE</b> Available in Black and Gray color, 290 ml cartridges Recommended for al K-FLEX IN CLAD SYSTEM applications	



INSULATING SUPPORTS	PIPE SUPPORTS WITH AND WITHOUT COLLAR	
	Specifically designed to ensure a correct insulation thickness where joints are made. The PIR central section, which covers the whole circumference and is attached to two K-FLEX insulating material sections, ensures a perfect continuity of the vapour barrier. Longitudinal sealing is obtained by means of the self-adhesive overlap. The external cover is in PVC. The support is also available with a collar and a special metal support which, when fixed to the supporting framework, ensures greater overall installation stability.	<b>Measurements:</b> Thicknesses mm: 13, 19, 25, 32 Tube diameter mm: from 18 to 160; inches: from 3/4" to 5"
	<b>TECHNICAL CHARACTERISTICS</b> Central section in PIR Compression resistance Temperature range Thermal conductivity Maximum stockage time Colour Permeability to vapour Diam. and thickness tolerance	Density 120 kg m <sup>3</sup> 1350 kPa -45 °C +105 °C $\lambda$ 0.036 W/(m•K) a 0 °C 1 year Black $\mu$ 7000 + 1 mm / +/- 1 mm



1 - Place the insulating support around the pipe.



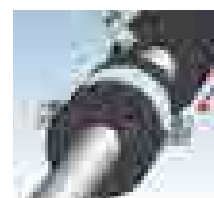
2 - Spread K-FLEX adhesive onto the half-collars.



3 - Seal lengthways using the adhesive overlap.



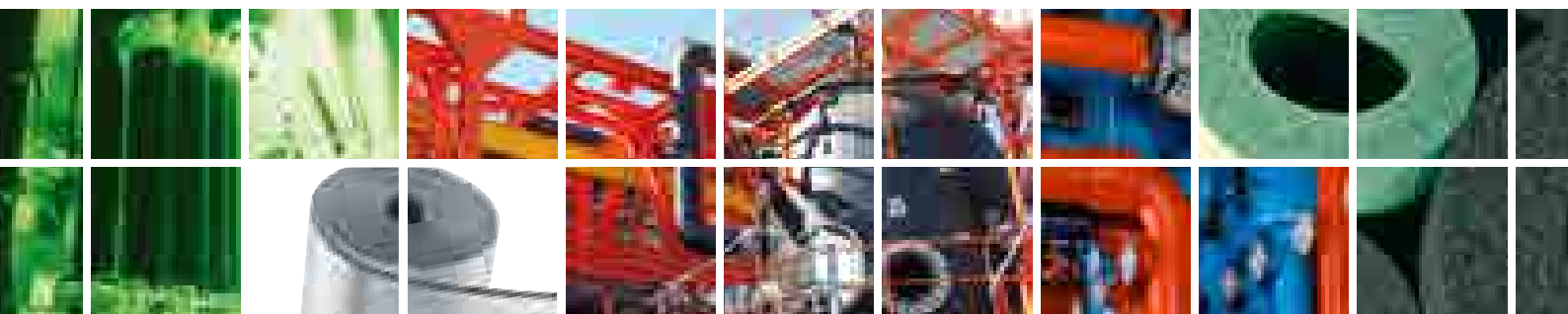
4 - Fix the collar around the support.



5 - Glue the support to the insulating material.

The insulating supports are also available in K-FLEX ECO, SOLAR, AL CLAD, COLOR, in the same measurements as those indicated for K-FLEX ST.





**L'ISOLANTE K-FLEX**

[www.kflex.com](http://www.kflex.com)

Headquarter: Via Leonardo da Vinci, 36 - 20877 Roncello (MB) - Italy  
 tel. +39 039.6824.1 - fax: +39 039.6824560  
[international@isolante.com](mailto:international@isolante.com)